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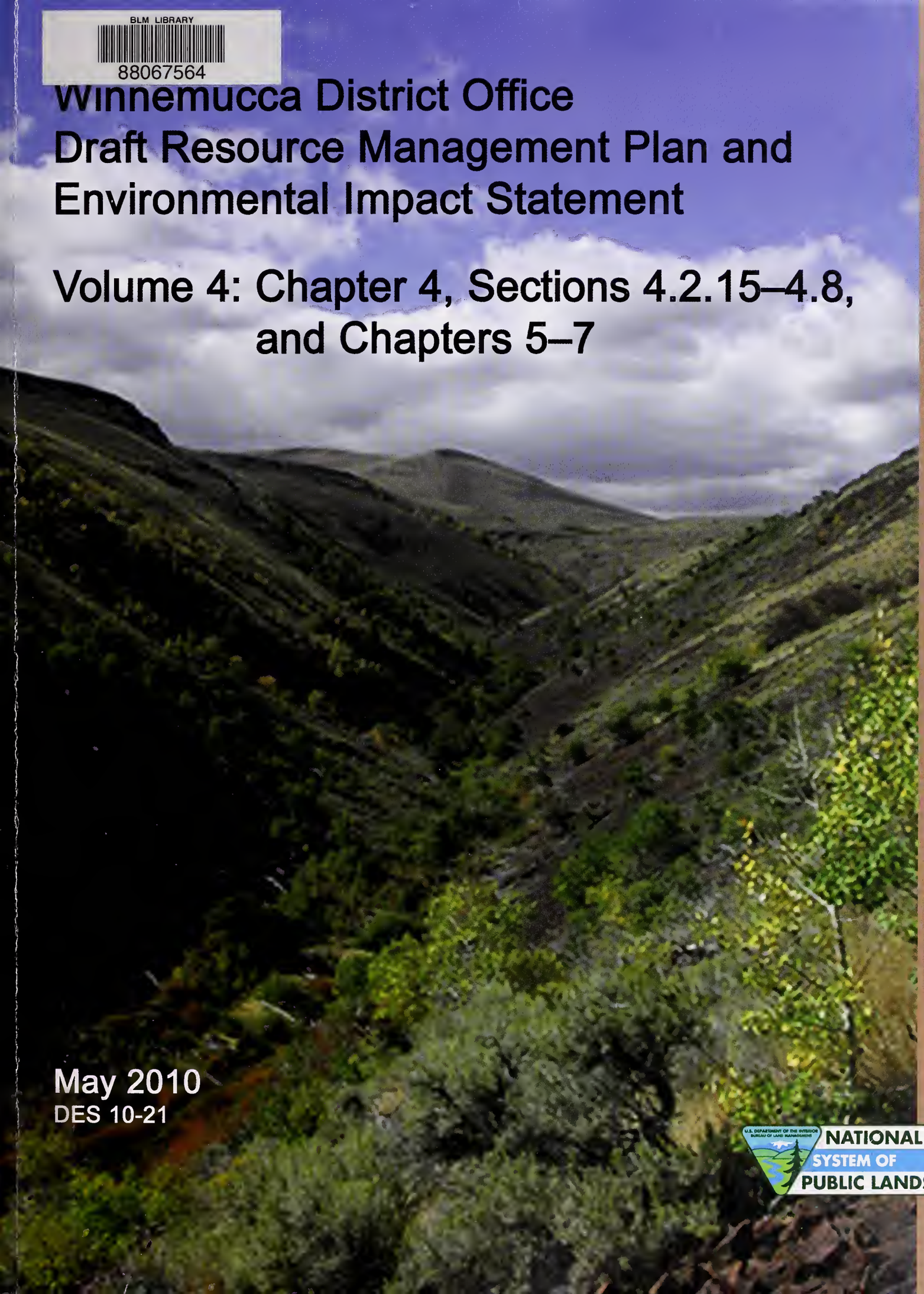
Winnemucca District Office Draft Resource Management Plan and Environmental Impact Statement

Volume 4: Chapter 4, Sections 4.2.15–4.8, and Chapters 5–7



May 2010
DES 10-21

NATIONAL SYSTEM OF PUBLIC LANDS

BLM

WINNEMUCCA DISTRICT OFFICE / NEVADA

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/NV/WM/ES-10/24+1793

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VOLUME 4: CHAPTER 4, SECTIONS 4.2.15 - 4.8, CHAPTERS 5-7

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LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
ACEC	area of critical environmental concern
AFY	acre-feet per year
AML	appropriate management level
AMP	allotment management plan
APHIS	Animal and Plant Health Inspection Service
APHIS-WS	Animal and Plant Health Inspection Service-Wildlife Services
AQ	air quality
ATV	all-terrain vehicle
AUM	animal unit month
BCB	Backcountry Byways
BEA	Bureau of Economic Analysis
BIA	US Department of the Interior, Bureau of Indian Affairs
BLM	US Department of the Interior, Bureau of Land Management
BMPs	best management practices
BPS	budget planning system
BRDHRCET	Black Rock Desert High Rock Canyon Emigrant Trails
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CK	cave and karst resources
CNHT	California National Historic Trail
CR	cultural resources
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
CWMA	Cooperative Weed Management Area
EA	environmental assessment
EIS	environmental impact statement
EO	Executive Order
EPA	US Environmental Protection Agency
ERMA	extensive recreation management area
ES	Executive Summary
ESA	Endangered Species Act of 1973
ES&R	emergency stabilization and rehabilitation
FLPMA	Federal Land Policy and Management Act
FLTFA	Federal Land Transaction Facilitation Act
FMU	Fire Management Unit
FMUD	final multiple use decision
FOFEM	First Order Fire Effects Model
FPA	fire program analysis
FRCC	fire regime condition class
FW	fish and wildlife
G	geology
GAWS	general aquatic wildlife survey
GIS	geographical information system
HA	herd area

LIST OF ACRONYMS *(continued)*

Acronym or Abbreviation	Full Phrase
HAP	hazardous air pollution
HMA	herd management area
HMAP	herd management area plan
HMP	habitat management plan
HUA	herd use area
HVH	high value habitat
IBLA	Interior Board of Land Appeals
IDT	interdisciplinary team
IMP	interim management policy
IPM	Integrated Pest Management
ISA	instant study area
ITA	Indian Trust Assets
KGRA	known geothermal resource area
LCT	Lahontan cutthroat trout
LG	livestock grazing
LR	lands and realty
MACT	maximum available control technology
MBTA	Migratory Bird Treaty Act
MFP	management framework plan
MIST	minimum impact suppression tactics
MOU	memorandum of understanding
MR	minerals: leasable, locatable, salable
NASA	National Aeronautics and Space Administration
NCA	National Conservation Area
NDEP	Nevada Division of Environmental Protection
NDOA	Nevada Department of Agriculture
NDOM	Nevada Division of Minerals
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDVI	Normalized Difference Vegetation Index
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act of 1969
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NGO	non-government organizations
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NRCS	US Department of Agriculture, Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	new source review
NSO	no surface occupancy
NWSRS	National Wild and Scenic River Systems
NV	Nevada
OCTA	Oregon-California Trail Association

LIST OF ACRONYMS *(continued)*

Acronym or Abbreviation	Full Phrase
OHV	off-highway vehicle
ORV	Outstanding Remarkable Value
PE	chemical and biological control
PFC	proper functioning condition
planning area	Winnemucca District Office boundary and scope for the RMP
$PM_{2.5}$	particulate matter smaller than 2.5 microns in diameter
PM_{10}	particulate matter smaller than 10 microns in diameter
PMU	population management unit
ppm	part per million
PR	paleontological resources
PS	public health and safety
PSD	prevention of significant deterioration
R	recreation
R&PP	Recreation and Public Purposes Act
RAC	resource advisory council
RAMS	risk assessment and mitigation strategy
RE	renewable energy
RFDS	Reasonably Foreseeable Development Scenario
RIP	range improvement project
RMIS	Recreation Management Information System
RMP	resource management plan
RMZ	recreation management zone
RNA	Research Natural Area
ROD	record of decision
ROI	region of influence
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
S	soils
SASEM	Simple Approach Smoke Estimation Model
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SNPLMA	Southern Nevada Public Land Management Act
SOG	standard operating guideline
SOP	standard operating procedure
SRMA	special recreation management area
SRP	special recreation permit
SSS	special status species
T&E	threatened and endangered
TA	transportation and access
TC	tribal consultation
TCP	traditional cultural property
TDS	total dissolved solids
TM	transportation and travel management
TNEB	thriving natural ecological balance
TNR	temporary nonrenewable
TSP	total suspended particles

LIST OF ACRONYMS *(continued)*

Acronym or Abbreviation	Full Phrase
TSS	total suspended solids
US	United States
USC	United States Code
USDI	United States Department of the Interior
USFS	United States Department of Agriculture, Forest Service
USFWS	US Department of the Interior, Fish and Wildlife Service
USGS	US Geological Survey
VF	vegetation forest and woodland products
VR	vegetation rangelands
VRI	visual resource inventory
VRM	visual resource management
VRW	vegetation riparian and wetlands
VW	vegetation weeds
WA	wilderness area
WAFWA	Western Association of Fish and Wildlife Agencies
WD	Winnemucca District
WDM	wildlife damage management
WDO	Winnemucca District Office
WFDSS	Wildland Fire Decision Support System
WFM	wildland fire ecology management
WFSA	wildland fire situation analysis
WHB	wild horses and burros
WR	water resources
WSA	wilderness study area
WSR	wild and scenic river
WUG	Western Utility Group
WUI	Wildland Urban Interface
WWV	watchable wildlife viewing site

4.2.15 Visual Resources

Summary

In general, Effects Common to All Alternatives involve actions that maintain or improve the quality of visual resources. In addition to relying on the visual resource contrast rating system to preserve the overall scenic quality of BLM-administered land, specific actions also maintain or improve visual resources involving air, water, flora, fauna, wildland fire, cultural resources, minerals, and recreation.

Alternative A would continue to rely on dated Management Framework Plans to manage visual resources. The plans are silent on certain issues related to geology, wildland fire, cultural resources, and cave and karst resources, all of which involve visual resources. This threatens visual resources associated with these resources. Also, incorrect or inconsistent visual resource management classifications would continue to make managing visual resources difficult and would threaten the quality of visual resources. Furthermore, the demand for recreational use is expected to continue to increase, increasing the value of open spaces and undeveloped landscapes and the need for management actions to protect sensitive visual resource values.

Alternative C would provide the greatest protection to visual resources after Alternative B. Because Alternative C designates the most priority 1 wildlife habitat acres and the greatest total priority 1 and 2 wildlife habitat acres, it would have the greatest impact on protecting visual resources. Alternative C would assign more VRM class designations that are equal to or more protective than the VRI class designations. Also, Alternative C would close the most acres to OHV use and would have no open areas.

Methods of Analysis

Methods and Assumptions

Potential impacts on visual resources from each alternative are based on interdisciplinary team knowledge of the resources and the WDO planning area, review of literature, and information gathered from the public during the planning process. To the extent practical, spatial data was used to compare the proposed management of each alternative to the objectives for VRM classes. Various actions that might create changes to the basic landscape elements (form, line, color, and texture) were considered in identifying potential impacts. Effects are quantified where possible. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- Scenic resources would remain in demand within the WDO over the life of the RMP;
- The demand for recreational use would continue to increase over the life of the RMP, increasing the value of open spaces and undeveloped landscapes and the need for management actions to protect sensitive visual resource values;
- All laws for the management and protection of visual resources would be followed, to the extent allowed by the budget and available personnel;
- Any new surface-disturbing activities proposed would be subject to NEPA analysis, which would include a VRM contrast rating;

- Activities proposed that would not initially meet VRM objectives for the area would be mitigated to the extent needed to meet the objectives. Those activities proposed that could not be mitigated would not be authorized;
- Incorrect or inconsistent visual resource management classifications would continue to make managing visual resources difficult and threaten the quality of visual resources;
- Some proactive restoration of areas that do not meet desired visual resource objectives may be completed each year; and
- Conflicts in the rural and urban interface will increase as rural subdivision development increases.

Effects from Air Quality Management

Effects Common to All Alternatives

The BLM would minimize degradation of the airshed by managing wildland fire, including prescribed fire, while meeting federal and state air quality and opacity standards. This would continue to promote visually clear skies over BLM-managed lands. There would be no new impacts.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Geology Management

Effects Common to All Alternatives

There are no effects common to all alternatives from geologic resource management.

Individual Effects under Alternative A

Alternative A does not address unique geologic resources. Therefore, there would continue to be no requirements for the BLM to protect unique geologic resources and, as a result, the visual resources associated with the unique geologic resources. This could result in activities, such as mining, which lead to the deterioration of visual resources associated with the unique geologic resources. There would be no new impacts.

Individual Effects under Alternative B

The BLM would identify areas of unique geologic interest. Six unique geologic resources are specifically identified and would remain open for all methods of mineral disposal subject to implementation of permit stipulations or mitigation measures to reduce undue adverse impacts. Although permit stipulations or mitigation measures would reduce undue adverse impacts, the potential for adverse impacts would not necessarily be entirely eliminated. As a result, the natural landscape could be altered in a way that could directly or indirectly diminish the aesthetics of the unique geologic resources and the surrounding landscape.

Individual Effects under Alternative C

The BLM would identify areas of unique geologic interest. Six unique geologic resources are specifically identified. The BLM would designate areas containing unique geologic resources as exclusion zones for ROWs and other discretionary actions and would close these areas to salable mineral disposal. Leasable minerals within unique geologic areas would be available with an NSO stipulation. The BLM would pursue withdrawal from the operation of the General Mining Law of areas containing unique geologic resources. As a result, the aesthetics of the unique geologic resources and the surrounding landscape would be protected.

Individual Effects under Alternative D

The impacts on visual resources with respect to unique geologic resources would be the same as those under Alternative C.

Effects from Soil Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that would likely affect aesthetics and visual resources on BLM-administered land.

Effects from Water Resources Management

Effects Common to All Alternatives

The BLM would continue to protect and maintain watersheds so that they appropriately capture, retain, and release water of quality that meets or exceeds state and federal standards. This would promote clean water in, for example, streams, resulting in visually clear aquatic landscapes. There would be no new impacts.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

The BLM would continue to minimize the spread of weeds so that native vegetation could thrive. This would promote a visual landscape with flora that is typical of the Great Basin. There would be no new impacts.

Individual Effects under Alternative A

There would be no alternative-specific impacts because there are no actions that affect aesthetics and visual resources on BLM-administered land.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

There are no effects common to all alternatives from vegetation-rangeland management.

Individual Effects under Alternative A

Alternative A does not address the type of seeds to be used for rehabilitation and reclamation, but the assumption is that both native and introduced seeds would be used. By using introduced seeds for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated; however, it would be vegetated with plants that are noticeably foreign to the area's native flora. No new impacts would occur.

Individual Effects under Alternative B

The BLM would use crested wheatgrass, forage kochia, or other noninvasive introduced seeds for rehabilitation and reclamation. By using noninvasive introduced seeds for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated; however, it would be vegetated with plants that are noticeably foreign to the area's native flora.

Individual Effects under Alternative C

Option 1

When possible, the BLM would use local native seed collections for rehabilitation and reclamation. Priority for use of seeds and plant materials is to use locally collected native seed first, then use native seeds. By using native seed for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated with plants that are similar to an area's native flora. This would have a greater impact on the visual environment than under Alternatives A and B.

Option 2

In areas that demonstrate a reasonable chance of success, the BLM would restore, protect, and improve degraded rangelands by initiating land treatments. The BLM would use management tools, such as vegetation manipulation (mechanical and biological treatments), fencing, and use restrictions. It would allow natural recovery due to the presence of surviving perennial plants or a sufficient seed source. Because the BLM would allow for natural recovery, the assumption is that recovery would rely on native, and not introduced, plants. This would have a greater impact on the visual environment than under Alternatives A and B.

Individual Effects under Alternative D

When effective, local native seed collections should be used for rehabilitation and reclamation. Priority for use of seeds and plant materials is as follows: first, locally collected native seed; second, native seeds; then third, introduced seed. By using native seed for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated with plants that are similar to an area's native flora. By using introduced seed for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated; however, it would be vegetated with plants that are noticeably foreign to the area's native flora.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

The BLM would continue to apply land health standards, SOPs, BMPs, use restrictions, or mitigation measures to all BLM and BLM-authorized activities to maintain and improve wildlife habitat. This would promote a visual landscape with flora and fauna that is typical of the Great Basin. There would be no new impacts.

Individual Effects under Alternative A

The BLM would continue to not designate priority 1 and 2 wildlife habitat areas. There would be no new impacts on visual resources.

Individual Effects under Alternative B

The BLM would designate no acres as priority 1 wildlife habitat areas (exclusion areas) and 716,528 acres as priority 2 (avoidance areas) (Table 4-10). This would limit certain types of activities to protect habitat. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources. Most of the avoidance areas would be in VRI Class III areas.

Table 4-10
VRI Classes for Land Designations—Alternative B

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Priority 1	0	0	0	0
Priority 2	53,340	108,274	486,938	67,964

Individual Effects under Alternative C

The BLM would designate 1,279,481 acres as priority 1 wildlife habitat areas (exclusion areas) and 869,645 acres as priority 2 (avoidance areas) (Table 4-11). This would limit certain types of activities to protect habitat. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources. Most of the avoidance and exclusion areas would be in VRI Class IV areas. Because Alternative C designates the most priority 1 wildlife habitat acres and the greatest total priority 1 and 2 wildlife habitat acres, it would have the greatest impact on protecting visual resources.

Table 4-11
VRI Classes for Land Designations—Alternative C

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Priority 1	103,443	71,319	291,572	816,588
Priority 2	59,358	0	27,320	782,968

Individual Effects under Alternative D

The BLM would designate 699,929 acres as priority 1 wildlife habitat areas (exclusion areas) and 1,325,967 acres as priority 2 (avoidance areas) (Table 4-12). This would limit certain types of activities to protect habitat. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources. Most of the avoidance and exclusion areas would be in VRI Class IV areas.

Table 4-12
VRI Classes for Land Designations—Alternative D

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Priority 1	67,916	0	72,390	486,938
Priority 2	108,497	86,243	334,490	808,110

Effects from Special Status Species Management

Effects Common to All Alternatives

There are no effects common to all alternatives from special status species management.

Individual Effects under Alternative A

Alternative A would continue to protect sensitive plant species and the habitat of sensitive animals. This would continue to promote a visual landscape with flora and fauna that is typical of the Great Basin. There would be no new impacts.

Individual Effects under Alternative B

Alternative B would implement additional actions that protect sensitive plant species and the habitat of sensitive animals. This would increase the protection of a visual landscape with flora and fauna that is typical of the Great Basin.

Individual Effects under Alternative C

The impacts on visual resources from special status species management are similar to those under Alternative B.

Individual Effects under Alternative D

The impacts on visual resources from special status species management are similar to those under Alternative B.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Resource Advisors would continue to be notified of all wildfires within the resource management planning area in order to coordinate, prioritize, and mitigate resource values and concerns. This would allow the visual resources specialist to provide input on visual resources near a wildfire. There would be no new impacts.

Individual Effects under Alternative A

Alternative A does not identify areas for allowing fire for resource benefit. There would continue to be no requirements for the BLM to use wildland fire to provide resource benefits. Consequently, the impacts on visual resources identified under Alternatives B and C would not occur. There would be no new impacts.

Individual Effects under Alternative B

The BLM would designate 110,167 acres as priority areas where fire may be used to provide resource benefits (Table 4-13). The assumption is that using wildland fire to provide resource benefits would promote healthy habitat native to the Great Basin. Consequently, allowing fire for resource benefit would promote a visual landscape with flora that is typical of the Great Basin. However, after an area had been burned, there would be short-term impacts on visual resources, including scorched terrain and vegetation, until native vegetation recolonized burned areas. Most of the fire use would occur in VRI Class IV areas.

Table 4-13
VRI Classes for Fire Use—Alternative B

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Fire Use	37,190	3,471	3,854	65,652

Individual Effects under Alternative C

The impacts on visual resources from wildland fire management are the same as those under Alternative A.

Individual Effects under Alternative D

The BLM would designate 9,932 acres as priority areas where fire may be used to provide resource benefits (Table 4-14). The assumption is that using wildland fire to provide resource benefits would promote healthy habitat native to the Great Basin. Consequently, allowing fire for resource benefit would promote a visual landscape with flora that is typical of the Great Basin. However, after an area had been burned, there would be short-term impacts on visual resources, including scorched terrain and vegetation, until native vegetation recolonized burned areas. Most of the fire use would occur in VRI Class IV areas.

Table 4-14
VRI Classes for Fire Use—Alternative D

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Fire Use	2,215	3,468	45	4,204

Effects from Cultural Resources Management

Effects Common to All Alternatives

As policy and guidance develops, the BLM would continue to manage the CNHT consistent with the administrative, resource, partnership, and visitor objectives, goals, and actions outlined in the National Scenic and Historic Trails Strategy and Work Plan. As a result, scenic values associated with the trail would continue to be managed. There would be no new impacts.

Individual Effects under Alternative A

Alternative A does not specify a VRM class for the viewshed of the Lovelock Cave Backcountry Byway. As a result, activities could occur in the viewshed that could alter the scenic landscape along the Lovelock Cave Backcountry Byway. There would be no new impacts.

The BLM would mitigate potential adverse effects on historic landscapes associated with eligible, unevaluated, or high potential CNHT segments by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone. However, due to the need to address incorrect or inconsistent VRM classifications, managing visual resources to a VRM Class II objective for all segments of the CNHT would continue to be problematic. For example, due to the proximity of the CNHT segments to I-80 and utility corridors, it is unlikely VRM Class II objectives could be met. There would be no new impacts.

Individual Effects under Alternative B

The BLM would protect the viewshed of the Lovelock Cave Backcountry Byway by managing the viewshed to VRM III. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave Backcountry Byway because there are currently no standards against which to manage the scenic landscape. Actions that occur in the viewshed would be required to partially retain the landscape character.

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM III objective within six miles of the centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridors, which would be managed to VRM IV. This action would provide a more attainable set of standards for managing visual resources where segments of the CNHT are near I-80.

Individual Effects under Alternative C

The BLM would protect the viewshed of the Lovelock Cave Backcountry Byway by managing the viewshed to VRM II. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave Backcountry Byway because there are currently no standards against which to manage activities that alter the scenic landscape. Actions that occur in the viewshed would be required to retain the landscape character, which is a higher standard than partially retaining the landscape character.

The impacts on visual resources with respect to the CNHT are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts on visual resources with respect to the Lovelock Cave Backcountry Byway are the same as those under Alternative C.

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridor at the southern edge of the Black Rock Desert. The portion of the trail viewshed that falls within the Black Rock Desert utility corridor would be managed to VRM III. Within the I-80 corridor, the trail viewshed would be managed to VRM III within six miles of the trail centerline or to the visual horizon within the six-mile zone, except for the power line corridor and sensitive areas of the trail viewshed. Sensitive areas would be managed to VRM II one mile on either side of the centerline of the trail. The I-80 trail viewshed in this power line corridor would be managed to VRM IV. This action would provide a more attainable

set of standards for managing visual resources where segments of the CNHT are near both I-80 and utility corridors.

Effects from Tribal Consultation

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Visual Resources Management

Effects Common to All Alternatives

The BLM would continue to use the visual resource contrast rating system during project-level planning to determine whether or not proposed activities would meet VRM objectives. Mitigation measures would be identified to reduce visual contrasts, and rehabilitation plans would be prepared to address landscape modifications on a case-by-case basis. Also, the BLM would continue to manage National Historic Trails according to its policy and guidance by protecting scenic landscapes and historic settings. Furthermore, WSAs would continue to be managed as VRM Class I. As a result, visual resources during specific projects, near NHTs, and in WSAs would continue to be preserved. There would be no new impacts.

Individual Effects under Alternative A

VRI Class designations are listed under Table 4-15 for VRM Classes for Alternative A.

Table 4-15
VRI Classes for VRM Classes—Alternative A

VRM Class Designations		VRI Class I		VRI Class II		VRI Class III		VRI Class IV		TOTAL
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
Alternative A	**Acres**									
VRM I	420,271	416,534	100%	1	0%	3,734	0%	2	0%	**420,271**
VRM II	346,302	0	0%	62,451	23%	163,476	11%	120,375	2%	**346,302**
VRM III	678,883	69	0%	28,724	10%	214,930	14%	435,159	9%	**678,882**
VRM IV	5,667,437	0	0%	155,866	57%	1,095,131	72%	4,416,432	88%	**5,667,429**
Sum	**7,112,893**	**416,603**	**100%**	**247,042**	**90%**	**1,477,271**	**97%**	**4,971,968**	**99%**	**7,112,884**

There would be no change to the VRM Class designations of BLM-administered land. Land would continue to be managed under the current VRM Class designations. There would be no new impacts.

Individual Effects under Alternative B

VRI Class designations are listed under Table 4-16 for VRM Classes for Alternative B.

Table 4-16
VRI Classes for VRM Classes—Alternative B

VRM Class Designations		VRI Class I		VRI Class II		VRI Class III		VRI Class IV		TOTAL
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
Alternative B										
VRM I	416,652	416,652	100%	0	0%	0	0%	0	0%	**416,652**
VRM II	391,203		0%	273,509	100%	29,264	2%	88,410	2%	**391,183**
VRM III	2,302,933		0%	0	0%	1,487,223	98%	807,303	16%	**2,294,526**
VRM IV	4,107,965		0%	0	0%	0	0%	4,103,633	82%	**4,103,633**
Sum	**7,218,753**	**416,652**	**100%**	**273,509**	**100%**	**1,516,487**	**100%**	**4,999,346**	**100%**	**7,205,994**

Alternative B would designate VRI Class I and Class II lands as VRM Class I and II lands, respectively. Alternative B would designate VRI Class III lands as VRM Class II and III lands. Also, Alternative B would manage VRI Class IV lands as VRM Class II, III, and IV lands. Consequently, the VRM class designation of BLM-administered land would be equal to or more protective than the VRI class designations.

Individual Effects under Alternative C

VRI Class designations are listed under Table 4-17 for VRM Classes for Alternative C.

Table 4-17
VRI Classes for VRM Classes—Alternative C

VRM Class Designations		VRI Class I		VRI Class II		VRI Class III		VRI Class IV		TOTAL
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
Alternative C										
VRM I	416,652	416,652	100%	0	0%	0	0%	0	0%	**416,652**
VRM II	3,083,211		0%	273,509	100%	560,435	37%	2,240,810	45%	**3,074,754**
VRM III	2,807,858		0%	0	0%	956,057	63%	1,849,597	37%	**2,805,654**
VRM IV	911,002		0%	0	0%	0	0%	908,940	18%	**908,940**
Sum	**7,218,723**	**416,652**	**100%**	**273,509**	**100%**	**1,516,492**	**100%**	**4,999,347**	**100%**	**7,206,000**

The effects would be similar to Alternative B. However, because the designation of VRI Class III and IV acres is different, visual resources would gain greater protection under Alternative C.

Individual Effects under Alternative D

VRI Class designations are listed under Table 4-18 for VRM Classes for Alternative D.

Table 4-18
VRI Classes for VRM Classes—Alternative D

VRM Class Designations		VRI Class I		VRI Class II		VRI Class III		VRI Class IV		TOTAL
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
Alternative D										
VRM I	416,652	416,652	100%	0	0%	0	0%	0	0%	**416,652**
VRM II	2,780,416		0%	273,506	100%	586,422	39%	1,912,175	38%	**2,772,103**
VRM III	3,073,906		0%	0	0%	930,067	61%	2,138,625	43%	**3,068,692**
VRM IV	961,504		0%	0	0%	0	0%	948,669	19%	**948,669**
Sum	**7,232,478**	**416,652**	**100%**	**273,506**	**100%**	**1,516,489**	**100%**	**4,999,469**	**100%**	**7,206,116**

The effects would be similar to Alternative C. However, because the designation of VRI Class IV acres is different, visual resources would gain less protection under Alternative D.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There are no effects common to all alternatives from cave and karst resources.

Individual Effects under Alternative A

Alternative A does not address unique geologic resources. Therefore, there would continue to be no requirements for the BLM to protect unique geologic resources and, as a result, the visual resources associated with the unique geologic resources. This could result in activities, such as recreation, which lead to the deterioration of visual resources associated with cave and karst resources. There would be no new impacts.

Individual Effects under Alternative B

The BLM would implement appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect unique geologic features and wildlife habitat. As a result, the aesthetics of the unique geologic resources and the surrounding landscape would be protected.

Individual Effects under Alternative C

Unlike Alternatives B and D, the BLM would not implement mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect unique geologic features and wildlife habitat. Alternative C would also be different in that the BLM would not identify undiscovered sites

or promote increased visitation. As a result, there is a greater chance for the aesthetics of unique geologic resources in known caves and karsts to be altered than the aesthetics of unique geologic resources in lesser known caves and karsts.

Individual Effects under Alternative D

The impacts on visual resources with respect to unique geologic resources are the same as those under Alternative B.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Minerals Management

Effects Common to All Alternatives

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations, which could be in areas where people live and work, where frequent recreation occurs, where expansive vistas are available, where minimal nearby development exists, or where little human-made light is present. There would be a potential for impacts that alter the natural aesthetics of an area and nighttime light. General stipulations for resource development would reduce potential impacts. The assumption is that changes to the natural aesthetics of an area and nighttime light would be consistent with the area's VRM classification.

Individual Effects under Alternative A

Effects from minerals (salable, fluid, solid, and locatable) management actions are described below. Actions that decrease the amount of land open to minerals management actions would result in fewer visual resources being altered by minerals management activity and structures. Actions that increase the amount of land open to minerals management actions would result in more visual resources being altered by minerals management activity and structures. Visual resources would be altered by the presence of, for example, nighttime light, roads, vegetation loss, and loss of open space. Minerals management actions would be required to comply with designated VRM classes.

Salable

VRI Class designations are listed under Table 4-19 for BLM-administered land that is open for mineral material (salable) actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for mineral material (salable) actions. Impacts on visual resources would not change.

Table 4-19
VRI Classes for Land Open for Mineral Material (Salable) Actions—Alternative A

VRI Class	Acres of Land Open for Mineral Material (Salable) Actions (Standard Stipulations)
I	58
II	266,945
III	1,510,730
IV	4,997,821

Fluid

VRI Class designations are listed under Table 4-20 for BLM-administered land that is open for fluid mineral actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for fluid mineral actions. Impacts on visual resources would not change.

Table 4-20
VRI Classes for Land Open for Fluid Mineral Actions—Alternative A

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)
I	58
II	265,384
III	1,502,131
IV	4,948,711

Solid

VRI Class designations are listed under Table 4-21 for BLM-administered land that is open for solid leasable mineral actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for solid leasable mineral actions. Impacts on visual resources would not change.

Table 4-21
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative A

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)
I	58
II	266,945
III	1,511,307
IV	4,997,876

Locatable

VRI Class designations are listed under Table 4-22 for BLM-administered land that is open for locatable mineral actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for locatable mineral actions. Impacts on visual resources would not change.

Table 4-22
VRI Classes for Land Open for Locatable Mineral Actions—Alternative A

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)
I	413,589
II	266,943
III	1,510,613
IV	5,123,574

Individual Effects under Alternative B

Salable

VRI Class designations are listed under Table 4-23 for BLM-administered land that is open for mineral material (salable) actions.

Table 4-23
VRI Classes for Land Open for Mineral Material (Salable) Actions—Alternative B

VRI Class	Acres of Land Open for Mineral Material (Salable) Actions (Government Use)	Acres of Land Open for Mineral Material (Salable) Actions (Special Stipulations)
I	58	0.008
II	56,261	39,333
III	161,303	325,120
IV	649,490	1,080,791

Noteworthy changes would occur for VRI Classes II-IV. Alternative B would reduce the amount of VRI Class II-IV land open for mineral material (salable) actions.

Fluid

VRI Class designations are listed under Table 4-24 for BLM-administered land that is open for fluid mineral actions.

Table 4-24
VRI Classes for Land Open for Fluid Mineral Actions—Alternative B

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)	Acres of Land Open for Fluid Mineral Actions (Special Stipulations)
I	0.004	0.004
II	177,578	85,951
III	1028182	354,764
IV	3,267,053	1,080,791

Noteworthy changes would occur for VRI Classes I-IV. Alternative B would reduce the amount of VRI Classes I-IV land that is open for fluid mineral actions.

Solid

VRI Class designations are listed under Table 4-25 for BLM-administered land that is open for solid leasable mineral actions.

Table 4-25
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative B

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)	Acres of Land Open for Solid Leasable Mineral Actions (Special Stipulations)
I	0.004	0.008
II	177,578	27,446
III	1,028,191	265,668
IV	3,267,179	1,080,791

Noteworthy changes would occur for VRI Classes I-IV. Alternative B would decrease the amount of VRI Class I-IV land that is open for solid leasable mineral actions

Locatable

VRI Class designations are listed under Table 4-26 for BLM-administered land that is open for locatable mineral actions.

Table 4-26
VRI Classes for Land Open for Locatable Mineral Actions—Alternative B

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)	Acres of Land Open for Locatable Mineral Actions (Special Stipulations)
I	0.002	413,637
II	78,382	195,122
III	751,598	764,482
IV	2,068,428	3,055,193

Noteworthy changes would occur for VRI Classes I-IV. Alternative B would increase the amount of VRI Classes I-IV land that is open for locatable mineral actions.

Individual Effects under Alternative C

Salable

VRI Class designations are listed under Table 4-27 for BLM-administered land that is open for mineral material (salable) actions.

Table 4-27
VRI Classes for Land Open for Mineral Material (Salable) Actions—Alternative C

VRI Class	Acres of Land Open for Mineral Material (Salable) Actions (Standard Stipulations)	Acres of Land Open for Mineral Material (Salable) Actions (Government Use)
I	0.006	58
II	65594	201,136
III	715,582	726,221
IV	1,965,491	2,693,694

Noteworthy changes would occur for VRM Classes II-IV. Alternative C would decrease the amount of VRI Classes II-IV land open for mineral material (salable) actions.

Fluid

VRI Class designations are listed under Table 4-28 for BLM-administered land that is open for fluid mineral actions. Noteworthy changes would occur for VRM Classes I-IV. Alternative C would decrease the amount of VRI Classes I-IV land open for fluid mineral actions.

Table 4-28
VRI Classes for Land Open for Fluid Mineral Actions—Alternative C

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)
I	0.006
II	65,594
III	716894
IV	1,967,321

Solid

VRI Class designations are listed under Table 4-29 for BLM-administered land that is open for solid leasable mineral actions.

Noteworthy changes would occur for VRM Classes I-IV. Alternative C would decrease the amount of VRI Classes I-IV land open for solid leasable mineral actions.

Table 4-29
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative C

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)
I	0.006
II	65,594
III	716764
IV	1,966,837

Locatable

VRI Class designations are listed under Table 4-30 for BLM-administered land that is open for locatable mineral actions. Noteworthy changes would occur for VRI Classes I-IV. Alternative C would decrease the amount of VRI Classes I-IV land open for locatable mineral actions.

Table 4-30
VRI Classes for Land Open for Locatable Mineral Actions—Alternative C

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)	Acres of Land Open for Locatable Mineral Actions (Special Stipulations)
I	0.014	390,596
II	122,331	86,108
III	809,424	588,407
IV	2,483,568	2,570,050

Individual Effects under Alternative D

Salable

VRM Class designations are listed under Table 4-31 for BLM-administered land that is open for mineral material (salable) actions. Noteworthy changes would occur for VRI Classes II-IV. Alternative D would decrease the amount of VRI Classes II-IV land open for mineral material (salable) actions

Table 4-31
VRI Classes for Land Open for Mineral Material (Salable) Actions—Alternative D

VRI Class	Acres of Land Open for Mineral Material (Salable) Actions (Standard Stipulations)	Acres of Land Open for Mineral Material (Salable) Actions (Government Use)	Acres of Land Open for Mineral Material (Salable) Actions (Special Stipulations)
I	0.021	58	0.004
II	119,605	83,120	62,425
III	758092	390,618	280,236
IV	2,610,014	1,297,148	859,875

Fluid

VRI Class designations are listed under Table 4-32 for BLM-administered land that is open for fluid mineral actions.

Table 4-32
VRI Classes for Land Open for Fluid Mineral Actions—Alternative D

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)	Acres of Land Open for Fluid Mineral Actions (Special Stipulations)
I	0.004	0.008
II	143,168	59,567
III	890,945	354,888
IV	2,973,914	1,245,079

Noteworthy changes would occur for VRI Classes I-IV. Alternative D would decrease the amount of VRI Classes I-IV land open for fluid mineral actions.

Solid

VRI Class designations are listed under Table 4-33 for BLM-administered land that is open for solid leasable mineral actions. Noteworthy changes would occur for VRI Classes I-IV. Alternative D would decrease the amount of VRI Classes I-IV land open for solid leasable mineral actions.

Table 4-33
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative D

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)	Acres of Land Open for Solid Leasable Mineral Actions (Special Stipulations)
I	0.004	0.008
II	143,169	59,594
III	890,842	354,732
IV	2,973,914	1,245,079

Locatable

VRI Class designations are listed under Table 4-34 for BLM-administered land that is open for locatable mineral actions. Noteworthy changes would occur for VRI Classes I, III, and IV. Alternative D would decrease the amount of VRI Class I, III and IV land open for locatable mineral actions.

Table 4-34
VRI Classes for Land Open for Locatable Mineral Actions—Alternative D

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)	Acres of Land Open for Locatable Mineral Actions (Special Stipulations)
I	0.004	412,677
II	154,232	119,275
III	921,597	587,695
IV	3,073,052	1,919,819

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

The BLM would continue to construct appropriate new facilities in such a way as to be unobtrusive with local landscape settings. This would allow the public to use facilities during recreation that blend in with the surrounding landscape. There would be no new impacts.

The BLM would continue to avoid the duplication of roads that have common destinations. As a result, the proliferation of roads, which alter natural aesthetics, would be minimized. There would be no new impacts.

Individual Effects under Alternative A

The BLM would continue to manage OHV designations according to Table 4-35.

Table 4-35
VRI Classes for OHV Use—Alternative A

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Open	58	262,374	1,510,542	4,995,539
Limited	416,604	25	183	128,540
Closed	17,138	4,555	440	2,701

There would be no change in the designation of BLM-administered land for OHV use and, therefore, there would be no new impacts on visual resources. Ongoing impacts, such as OHV use in visually sensitive areas, would continue. Continued use of OHVs in visually sensitive areas could cause visual resources to deteriorate by, for example, scarring the terrain and disturbing vegetation. There would be no new impacts.

Individual Effects under Alternative B

The BLM would manage OHV designations according to Table 4-36.

Table 4-36
VRI Classes for OHV Use—Alternative B

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Open	0	4,666	158,468	1,295,571
Limited	1,265,74	264,094	1,354,801	3,699,611
Closed	17,138	4,555	440	2,701

Alternative B would decrease the number of acres designated as open in VRI Classes I-IV. As a result, disturbances to the visual environment from motorized vehicles would likely decrease in these areas. Also, Alternative B would increase the number of acres designated as limited in VRI Classes II-IV. Consequently, disturbances to the visual environment from motorized vehicles would likely increase in these areas.

Individual Effects under Alternative C

The BLM would manage OHV designations according to Table 4-37.

Alternative C would decrease the number of acres designated as open in VRI Classes I-IV. As a result, disturbances to the visual environment from motorized vehicles would likely decrease in these areas. Also, Alternative C would increase the number of acres designated as limited in VRI Classes II-IV. Consequently, disturbances to the visual environment from motorized vehicles would likely increase in these areas.

Table 4-37
VRI Classes for OHV Use—Alternative C

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Open	0	0	0	0
Limited	399,508	268,523	1,511,134	5,092,556
Closed	17,137	412	5,035	34,287

Individual Effects under Alternative D

The BLM would manage OHV designations according to Table 4-38.

Table 4-38
VRI Classes for OHV Use—Alternative D

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Designation	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Open	0	4,187	70,471	215,273
Limited	399,513	264,334	1,440,825	4,902,466
Closed	17,138	4,968	5,036	8,343

Alternative D would decrease the number of acres designated as open in VRI Classes I-IV. As a result, disturbances to the visual environment from motorized vehicles would likely decrease in these areas. Also, Alternative D would increase the number of acres designated as limited in VRI Classes II-IV. Consequently, disturbances to the visual environment from motorized vehicles would likely increase in these areas.

Effects from Renewable Energy Management

Effects Common to All Alternatives

The BLM would continue to process rights-of-way to wind energy developers for project areas and wind monitor and testing sites. It also would continue to authorize ROWs by applying appropriate BMPs, land use restrictions, stipulations, and mitigation measures. Because these actions are already occurring, there would be no new impacts on visual resources.

Individual Effects under Alternative A

The BLM would continue to lease public lands to wind energy companies for developing wind energy generation facilities and would continue to maintain exclusion areas applicable to wind energy projects within WSAs, ACECs, TCPs, and areas of critical habitat for threatened and endangered and sensitive species. Because these actions are already occurring, there would be no new impacts on visual resources.

Individual Effects under Alternative B

The BLM would designate avoidance areas (716,528 acres) to protect resources. Granting ROWs or leasing public lands for renewable energy projects in avoidance areas would require special stipulation to mitigate any impact on resources. No exclusion zones would be designated. Establishing avoidance areas and requiring special stipulations would limit certain types of activities from altering the landscape, thereby protecting visual resources.

Individual Effects under Alternative C

The BLM would designate avoidance areas (869,645 acres) to protect resources. Granting ROWs or leasing public lands for renewable energy projects in avoidance areas would require special stipulation to mitigate any impact on resources. The BLM would reduce undue adverse environmental impacts by developing lease stipulations and mitigation measures. The BLM would designate 1,279,481 acres as exclusion zones where no overhead transmission lines and ROWs for energy projects would be allowed. These actions would limit certain types of activities from altering the landscape, thereby protecting visual resources. Because Alternative C designates the most exclusion zones and the greatest total exclusion and avoidance zones, it would have the greatest impact on protecting visual resources.

Individual Effects under Alternative D

The BLM would designate avoidance areas (1,325,967 acres) to protect resources. Granting ROWs or leasing public lands for renewable energy projects in avoidance areas would require special stipulation to mitigate any impact to resources. The BLM would designate 699,929 acres of exclusion zones where no overhead transmission lines and ROWs energy projects would be allowed. These actions would limit certain types of activities from altering the landscape, thereby protecting visual resources.

Effects from Transportation and Access Management

Effects Common to All Alternatives

The BLM would continue to maintain its system roads in accordance with the BLM Roads Maintenance Manual. This would help keep roads from becoming a noticeable detraction from the visual landscape. Constructing a road can visually disrupt the form, line, color, and general setting of the local environment. There are no new impacts.

Individual Effects under Alternative A

The BLM would continue to relocate, realign, or redesign current BLM roads to prevent or reduce sedimentation impacts. This would help minimize erosion, thereby minimizing disturbance to the natural landscape.

Alternative A does not have a road and ROW action similar to Alternatives B and C. This would continue to allow road construction that detracts from the integrity and continuity of the visual environment. There are no new impacts.

Individual Effects under Alternative B

The BLM would conduct a condition survey program to identify roads that are necessary for BLM use and for roads that contribute to resource damage. The BLM would evaluate the roads' usefulness and would upgrade or downgrade functional classification or maintenance level, as appropriate for the need. This would help minimize erosion and the number of roads crisscrossing the landscape, thereby minimizing disturbance to the natural landscape.

The BLM would construct its roads and would require that non-BLM road ROWs be constructed so as to avoid fragmenting land. This would help preserve the integrity of the visual landscape by preventing roads from dividing the landscape.

Individual Effects under Alternative C

The BLM would conduct a condition survey program to identify roads that are necessary for its use and for roads that contribute to resource damage. The BLM would evaluate the roads' usefulness and would upgrade or downgrade functional classification or maintenance level, as appropriate for the need. This would help minimize erosion and the number of roads crisscrossing the landscape, thereby minimizing disturbance to the natural landscape. These impacts would be the same as Alternative B.

The BLM would construct its roads and would require that non-BLM road ROWs be constructed so as to avoid fragmenting land. The BLM would locate roads so as to preserve open space. This would help preserve the integrity and continuity of the visual landscape by preventing roads from dividing the landscape.

Individual Effects under Alternative D

The BLM would conduct a condition survey program to identify roads that are necessary for its use and for roads that contribute to resource damage. The BLM would evaluate the roads' usefulness and would upgrade or downgrade functional classification or maintenance level, as appropriate for the need. This would help minimize erosion and the number of roads crisscrossing the landscape, thereby minimizing disturbance to the natural landscape. These impacts would be the same as Alternative B.

Alternative D does not have a road and ROW action similar to Alternatives B and C. This would continue to allow road construction that detracts from the integrity and continuity of the visual environment. There are no new impacts.

Effects from Lands and Realty Management

Effects Common to All Alternatives

There are no effects common to all alternatives from lands and realty management.

Individual Effects under Alternative A

The BLM would continue to manage land tenure adjustments according to Table 4-39. There would be no changes involving land tenure adjustments. The fragmented ownership of BLM-administered

lands would continue to make it difficult to manage visual resources. There would be no new impacts.

Table 4-39
VRI Classes for Land Tenure Adjustments—Alternative A

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Tenure Adjustment	Area (acres)	Area (acres)	Area (acres)	Area (acres)
Disposal	0	36,974	6,974	2,254,371
Retention (Zones 1 & 2)	416,652	236,668	819,592	2,873,559

Individual Effects under Alternative B

The BLM would manage land tenure adjustments according to Table 4-40.

Table 4-40
VRI Classes for Land Tenure Adjustments—Alternative B

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Tenure Adjustment	Area (acres)	Area (acres)	Area (acres)	Area (acres)
Disposal	24,897	34,978	577,137	1,486,920
Retention	391,755	238,529	939,686	3,506,724

Unlike Alternative A, Alternative B would dispose of lands designated as VRI Class I. Because VRI Class I areas are for WSAs, the BLM would dispose of land once considered aesthetically valuable enough to be considered as wilderness. Also, Alternative B would dispose of less land designated as VRI Class II.

Individual Effects under Alternative C

The BLM would manage land tenure adjustments according to Table 4-41.

Table 4-41
VRI Classes for Land Tenure Adjustments—Alternative C

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Tenure Adjustment	Area (acres)	Area (acres)	Area (acres)	Area (acres)
Disposal	24,892	13,611	373,317	804,095
Retention	391,760	259,896	1,143,550	4,194,531

Unlike Alternative A, Alternative C would dispose of lands designated as VRI Class I. Because VRI Class I areas are for WSAs, the BLM would dispose of land once considered aesthetically valuable enough to be considered as wilderness. Also, Alternative C would dispose of less land designated as VRI Class II.

Individual Effects under Alternative D

The BLM would manage land tenure adjustments according to Table 4-42.

Table 4-42
VRI Classes for Land Tenure Adjustments—Alternative D

	VRI Class I	VRI Class II	VRI Class III	VRI Class IV
Land Tenure Adjustment	**Area (acres)**	**Area (acres)**	**Area (acres)**	**Area (acres)**
Disposal	24,930	13,872	375,315	867788
Retention	391,722	259,639	1,141,642	4,130,109

Unlike Alternative A, Alternative D would dispose of lands designated as VRI Class I. Because VRI Class I areas are for WSAs, the BLM would dispose of land once considered aesthetically valuable enough to be considered as wilderness. Also, Alternative C would dispose of less land designated as VRI Class II.

Effects from ACEC/ RNA Management

Effects Common to All Alternatives

There are no effects common to all alternatives from ACEC/RNA management.

Individual Effects under Alternative A

The Osgood Mountain ACEC would continue to be designated as VRM Class IV. Impacts on visual resources would not change.

Individual Effects under Alternative B

The Osgood Mountain ACEC would be managed according to VRM Class II objectives, instead of Class IV objectives. The change in management actions for the Osgood Mountain ACEC would provide greater protection of visual resources in this unique area.

Individual Effects under Alternative C

Impacts on visual resources from management of the Osgood Mountain ACEC are the same as those under Alternative B.

The Pine Forest, Raised Bog, and the Stillwater ACECs would be managed according to VRM Class II objectives. Managing the Pine Forest, Raised Bog, and Stillwater ACECs to meet VRM Class II objectives would increase the protection of visual resources in these unique areas.

Individual Effects under Alternative D

The Osgood Mountain ACEC would be managed according to VRM Class III objectives. The Pine Forest, Raised Bog, and Stillwater ACECs would be managed according to VRM Class II objectives. Impacts on visual resources from management of ACECs are the same as those under Alternative C.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from National Trails Management

Effects Common to All Alternatives

The impacts on visual resources from national trails management actions are the same as those under those described above under Effects from Cultural Resources Management.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There are no effects common to all alternatives from ACEC/RNA management.

Individual Effects under Alternative A

There are no impacts because there are no specific actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Individual Effects under Alternative B

There are no impacts because there are no specific actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Individual Effects under Alternative C

The BLM would protect wilderness characteristics with a designation of closed to mineral leasing, ROW exclusion zones, and priority habitat 1 in the following areas:

- Bluewing Mountains (25,651 acres);
- North Sahwave Mountains (45,687 acres);

- Fencemaker Area of the East Range (50,283acres); and
- Portion of Tobin Range, between the China Mountain WSA and the Mount Tobin WSA (33,854 acres).

This would limit certain types of activities. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources of the natural landscape.

Individual Effects under Alternative D

There are no impacts because there are no specific actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no effects common to all alternatives from sustainable development management.

Individual Effects under Alternative A

Alternative A does not address sustainable development, so there would continue to be no actions for the BLM to implement involving sustainable development and, as a result, there would be no corresponding changes to visual resources. There would be no new impacts.

Individual Effects under Alternative B

Under Alternative B, surface-disturbing actions would occur. These types of activities would be subject to the analysis stage of the BLM VRM system. The analysis stage involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments would meet the management objectives established for the area, or whether design adjustments would be required. This process is described in BLM Handbook H-8431-1, Visual Resource Contrast Rating. Activities proposed that would not initially meet VRM objectives for an area would be mitigated to the extent needed to meet the VRM objectives. Those activities proposed that could not be mitigated would not be authorized. The BLM would rely on the VRM system to protect the scenery of BLM-administered land.

Individual Effects under Alternative C

The impacts on visual resources are the same as those under Alternative B.

Individual Effects under Alternative D

The impacts on visual resources are the same as those under Alternative B.

Cumulative Effects

Effects of past actions and natural events, including wildland fires, wildland fire suppression, mining, vegetation treatments, sale of forest products, motorized vehicle use, noxious weed invasion, subdivision of rural lands, and road construction, have affected visual resources in the WDO planning area. Foreseeable future actions affecting visual resources within the WDO planning area mirror many of the actions that have occurred in the past. The BLM cannot prevent certain events, such as landscape-level projects conducted by other agencies, such as the Bureau of Reclamation, nor can the BLM entirely prevent such events as wildland fires. The BLM does have greater control over other activities, such as mining, the sale of forest products, and motorized vehicle use. Also, certain activities, such as road construction, occur relatively rapidly. Other situations, such as the public living closer to public lands and noxious weeds invading the area, occur relatively slowly. As a result, impacts on visual resources, such as changing the visual landscape or increasing nighttime light, can also occur relatively slowly or rapidly. The BLM would continue to use stipulations and BMPs to minimize short-term impacts associated with specific activities at specific sites. However, gradual changes to the visual landscape through the accumulation of human-made alterations to the visual landscape are expected to be long-term, especially as undeveloped or natural areas are altered.

4.2.16 Cave and Karst

Summary

This section presents potential impacts of the alternatives on caves and karst features in the planning area. Caves and rock areas provide day and night roosting habitat for bat species and are important elements in supporting the sensitive species in the planning area. Caves and karst features also provide opportunities for recreation. Lovelock Cave is listed on the National Register of Historic Places.

Karst features can occur in carbonate rock formations; however, no significant karst features have been identified in the WDO. The planning area has not been systematically surveyed for caves.

Caves are geologic features, and the discussion of the management actions and potential impacts on geologic resources applies to them as well. The actions concerning bats are also discussed under Special Status Species Management.

Impacts on caves occur by excavation, theft, vandalism, and large-scale surface-disturbing activities such as mining. Experience has shown that damage, theft, and vandalism are usually concentrated near roads and trails. Impacts on caves may increase because of additional visitation to areas within the planning area.

Overall, objectives and actions associated with other resources that result in closure to surface disturbance activities would have beneficial impacts (less chance of disturbance) on any caves that might be present. These other objectives and actions are referenced below.

If caves are found during the surveys required prior to surface-disturbing activities, mitigation measures would be developed and implemented to protect these features.

Methods of Analysis

Methods and Assumptions

The analysis of potential impacts on caves is based on the expertise of BLM resource specialists at the WDO, a review of existing literature, and information provided by non-planning team experts in the BLM and other agencies.

The following assumptions regarding the resource base and management practices were considered in the analysis:

- The greatest potential for impacts would result from actions that include direct large-scale disturbance of bedrock that includes caves;
- Damage, theft, and vandalism is likely to increase with increased visitation;
- The bats that might live in caves could be impacted by vandalism, noise from visitors, and litter;
- Education of the public increases support for protection of caves and bats but also increases visitation; and
- Actions associated with other resources that result in closure of surface-disturbing activities would have additional beneficial impacts (such as less chance of disturbance) on any caves that might be present.

The area of analysis for cumulative effects on caves is defined as northwestern Nevada.

Effects from Air Quality Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from air quality management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Geology Management

Effects Common to All Alternatives

The geology objectives and actions do not involve features that are near known caves. There are no likely impacts on cave and karst resources resulting from geology management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Soil Resources Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from soil resources management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from water resources management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from forest and woodland products management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from weeds management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from chemical and biological control management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from rangeland management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from riparian and wetlands management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There are no likely impacts under any of the alternatives on cave and karst resources resulting from fish and wildlife management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Special Status Species Management

Effects Common to All Alternatives

All alternatives require an inventory for bats and habitat usage before allowing any surface occupancy or disturbance within at least 200 yards of caves (500 yards for Alternative C) that are not known to be occupied. The inventories will increase the BLM's knowledge on the location and extent of bat habitat and will enable it to better protect bats in the inhabited areas. These protections would also protect the associated caves.

Individual Effects under Alternative A

Large-scale surface-disturbing discretionary actions would not be allowed within 200 yards of occupied adits, caves, or other habitats. The associated caves would be protected from surface-disturbing activities as a result of the protection of the bats.

Individual Effects under Alternative B

Surface-disturbing discretionary actions would be allowed near occupied adits, caves, or other habitats if mitigation measures to avoid or reduce adverse impacts were developed. Alternative B is less restrictive than Alternative A and depends on mitigating impacts rather than prohibition of actions near the bat habitats. The associated caves would be less protected under Alternative B.

Individual Effects under Alternative C

Alternative C would require an inventory for bats and habitat usage before allowing any surface occupancy or disturbance within 500 yards of caves that are not known to be occupied, rather than within 200 yards as proposed under the other alternatives.

Large-scale surface-disturbing discretionary actions would not be allowed within 500 yards of occupied adits, caves, or other habitats. The protection of caves associated with bat habitat is greater under Alternative C than under Alternatives A, B, or D.

Individual Effects under Alternative D

Large-scale surface-disturbing discretionary actions would not be allowed within 200 yards of occupied adits, caves, or other habitats. The protection of caves associated with bat habitat under Alternative D is greater than under Alternative B, is equivalent to Alternative A, and is less under Alternative C.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from wild horse and burro management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Wildland Fire Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from wildland fire management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Lovelock Cave is known to contain cultural resources, and any caves yet to be discovered could contain cultural resources. If so, these resources would be managed under the cultural resources program, in accordance with the cultural resource management objectives and actions.

Unless a cave contains cultural resources, there are no likely impacts on cave and karst resources resulting from cultural resource management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Tribal Consultation Management

Effects Common to All Alternatives

Any caves yet to be discovered could also be a TCP. If so, the cave would be managed under the cultural resources program, in accordance with the cultural resource and tribal consultation management objectives and actions.

Unless a cave is connected to a TCP, there are no likely impacts on cave and karst resources resulting from tribal consultation objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

Any caves yet to be discovered could contain paleontological resources. If so, these resources would be managed under the paleontological resources program, in accordance with the paleontological resource management objectives and actions.

Unless a cave contains paleontological resources, there are no likely impacts on cave and karst resources resulting from paleontological resources management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Visual Resources Management

Effects Common to All Alternatives

The known caves in the WDO are not integral parts of any scenic viewshed. There are no likely impacts on cave and karst resources resulting from visual resources management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

Increased visitation would result in a greater risk of impacts from vandalism as access is improved and locations become known.

Individual Effects under Alternative A

There are no objectives or management actions under Alternative A. Under Alternative A, any protections would be on a case-by-case basis. There are no planned education or increased awareness programs.

Individual Effects under Alternative B

Alternative B includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect the unique geologic features and wildlife habitat. These actions would also protect the cave resources. Alternative B includes greater protections for cave resources (e.g., closures and physical barriers) than Alternative A. The education and public awareness provisions would increase visitation to those areas, resulting in a greater risk of impacts from vandalism as access is improved and locations become known.

Individual Effects under Alternative C

Alternative C includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect the unique geologic features and wildlife habitat. These actions would also protect the cave resources.

Alternative C includes greater protections for cave resources (e.g., closures and physical barriers) than Alternative A and has essentially equivalent protections as Alternative B. Under Alternative C, the education and public awareness provisions would be limited to those that would not increase visitation and would involve less risk of impacts from vandalism than Alternatives B and D.

Individual Effects under Alternative D

Alternative D includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect the unique geologic features and wildlife habitat. These actions would also protect the cave resources. Alternative B includes greater protections for cave resources (e.g., closures and physical barriers) than Alternative A. The education and public awareness provisions would increase visitation to those areas, resulting in a greater risk of impacts from vandalism as access is improved and locations become known.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from livestock grazing management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Minerals Management

Effects Common to All Alternatives

If caves are present where mining occurs, these resources could be impacted by the extent and depth of ground disturbance associated with salable and locatable mineral development. Drilling activities could intersect with undiscovered caves or lava tubes.

While none of the known caves in the WDO contain mineral resources, yet to be discovered caves might contain cave specific deposits (e.g., crystals and sheet flows). If so, they would be managed on a case-by-case basis in coordination with the minerals resources program objectives and actions, which include some restrictions on mining operations near caves.

Individual Effects under Alternative A

There are no restrictions to the amount of land open to mining activities or limits to mining operations based on caves and karst characteristics management objectives or actions under Alternative A. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Individual Effects under Alternative B

There are no restrictions to the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative B. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Individual Effects under Alternative C

The rights to locatable minerals could be acquired, but proposals for locatable minerals, salable minerals, and fluid and solid leasable minerals operations would be restricted within 500 feet of a cave or karst feature. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) intersected by the site or the 500-foot buffer line would be closed. This would have the effect of protecting the caves and associated bat habitat from disturbance. Under Alternative C, caves would have greater protection, and thus fewer impacts, under Alternative C than under Alternatives A, B, or D.

Individual Effects under Alternative D

There are no restrictions on the amount of land open to mining activities or limits on mining operations, based on caves and karst characteristics management objectives or actions under Alternative D. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from recreation, visitor outreach, and services management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

While exploring caves can be considered as recreational for some individuals and small groups, there are no caves that are recognized as recreations sites.

Effects from Renewable Energy Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from renewable energy management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Transportation and Access Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from transportation and access management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Lands and Realty Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from lands and realty management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Any lands that are closed to the public closed to ground-disturbing activities or that are withdrawn in association with other resource management objectives and actions could contain cave and karst resources. If so, the closure or mineral withdrawal would serve to help protect any cave or karst resources that might be present by reducing the potential for disturbance.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from ACEC/RNA management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from backcountry byways management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

The Lovelock Cave Byway is managed in accordance cultural resource and byway management objectives and actions not as a cave resource.

Effects from National Trails Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from national trails management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from wild and scenic rivers management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from wilderness, wilderness study areas, or areas with wilderness characteristics management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from watchable wildlife viewing sites management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from public health and safety management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

While there are no caves specifically identified with safety issues, any actions involving sealing off a cave would be managed in accordance with public health and safety management objectives and actions.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no likely impacts on cave and karst resources resulting from sustainable development management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cumulative Effects

Increased regulation and increased protection of other resources would result in less area being subject to surface-disturbing activities. These changes would result in less general damage to caves and bat habitat and would increase protection of these resources.

4.3 RESOURCE USES

4.3.1 Livestock Grazing

Summary

Grazing would be impacted when all or part of an allotment is closed to livestock grazing (during vegetation treatments, prescribed burning, reforestation, fire, drought or watershed or riparian restoration). Grazing exclusion areas designed to protect riparian habitat for wildlife and sensitive species or to protect cultural or paleontological resources would impact livestock grazing by restricting or altering livestock movement and access to forage. Mineral and energy development would impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of these facilities. Alternative D would best provide opportunities for grazing while meeting Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health, followed by Alternative B and then Alternative A; Alternative C, Option 1 provides the least opportunities for grazing. Actions under most resource categories have the potential to affect livestock grazing.

Table 4-43
Summary of Effects on Livestock Grazing–Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C (Option 1)	Alternative C (Option 2)	Alternative D
Change in Acres under Lease for Grazing					
Lands available for livestock grazing	No net change: 8,232,727 acres	No net change: 8,232,727 acres	Net decrease: 8,038,084 acres	Net decrease: 0 acres	Net decrease: 8,016,754 acres
Grazing lands available for disposal (% of allotments available for disposal)	No net change: 2,66,3082 acres (32%)	Net decrease: 1,934,038 acres (23%)	Net decrease: 1,040,225 acres (13%)	Net decrease: 7,926,430 acres (0%)	Net decrease: 1,093,046 acres (14%)
Change in AUMs Permitted on Allotments					
Available AUMs (Note: Other resource activities that change grazing acres would have same impact on AUMs)	No net change: 399,073 AUMs	No net change: 399,073 AUMs	No net change: 399,073 AUMs	Net decrease: 0 AUMs	Net decrease: 398,860 AUMs

Methods of Analysis

Methods and Assumptions

Impacts on livestock grazing are generally the result of activities that affect forage levels, livestock exclusion, or reduction of allotment acreage. Impact analysis is based on interdisciplinary team knowledge of resources and the planning area, a literature review, and information provided by BLM specialists. Certain assumptions are made, including the following:

- Data regarding grazing allotments are compiled from BLM sources;
- The BLM will continue to complete rangeland health assessments in accordance with the Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health;

- Allotments are monitored yearly, based on allotment priority, resource values, and potential for impacts due to grazing use; and
- Season of use and number of AUMs used are difficult to control on allotments with scattered public parcels surrounded by private land.

Effects from Air Quality Management

Effects Common to Alternatives A, B, C (Option 1), and D

Actions associated with air quality management could impact grazing indirectly through long-term effects on the quality and quantity of livestock grazing forage. Air quality issues that affect vegetation could include particulate matter and fugitive dust from allowing fire for resource benefit, prescribed fire, and mining operations. Dust that collects on vegetation reduces the quality and regenerative capacity of shrubs, forbs, and grasses and could decrease the availability and palatability of forage for livestock.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to All Alternatives.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

There would be no livestock grazing under Alternative C, Option 2 on public lands; therefore, there would be no impacts from air quality management.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Geology Management

Effects Common to All Alternatives

Protection of geologic features or exclusion from areas containing geologic features would not pertain to livestock grazing and would not impact grazing resources under any of the alternatives.

Individual Effects under Alternative A

There are no impacts on livestock grazing.

Individual Effects under Alternative B

There are no impacts on livestock grazing.

Individual Effects under Alternative C

There are no impacts on livestock grazing.

Individual Effects under Alternative D

There are no impacts on livestock grazing.

Effects from Soil Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term direct impacts on livestock grazing would consist of adjustments in season and duration of use to prevent erosion and soil compaction caused by congregating cattle, especially under trees during hot season grazing. For example, protection of biological crusts and other sensitive soil types would pertain to livestock grazing and would impact grazing resources under all of the alternatives. In the long term, however, soil resources management would generally result in enhanced vegetative conditions through actions designed to reduce erosion, which would indirectly increase forage as the Standards for Rangeland Health are attained.

In addition to the impacts identified under Effects Common to All Alternatives, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Approximately 1,055,418 acres within livestock grazing allotments have a high potential for the existence of biological crusts under Alternative A. Protecting biological crusts would indirectly impact livestock grazing by increasing restrictions on range management, such as limiting livestock grazing to seasons when the soils are moist.

Individual Effects under Alternative B

Approximately 1,055,418 acres within livestock grazing allotments have a high potential for the existence of biological crusts under Alternative B. Impacts are the same as those under Alternative A.

Effects under Alternative C

Option 1

Impacts are the same as those under Effects Common to All Alternatives; however, due to additional closures to livestock grazing under Alternative C, Option 1, only 1,055,167acres within livestock grazing allotments would have a high potential for the existence of biological crusts. In addition, Alternative C is the most restrictive in managing biological crust by reducing activities that would impact or damage biological crusts.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from soil resources management.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to All Alternatives; however, due to additional closures to livestock grazing under Alternative D, only 1,048,390 acres within livestock grazing allotments have a high potential for the existence of biological crusts.

Effects from Water Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

Livestock grazing would be directly affected by the need to adjust or modify current livestock management to achieve Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health under all of the alternatives. Developing water sources for multiple uses under all alternatives also would impact livestock grazing by making more water available, indirectly increasing weight gain and conception rates of livestock. More dispersed water sources would prevent livestock from concentrating around current water holes and would allow for changes in utilization patterns, which may result in an increase in available forage.

Protecting water quality and watershed health could require direct changes in livestock management such as deferred or shortened grazing periods, exclusion, establishing riparian pastures, and increased cattle herding. These tools are especially used during hot season grazing when cattle congregate in small shaded areas to cool off (often where there is water). Implementing short-term monitoring criteria such as stubble height and bank alteration would stabilize the banks and may decrease the amount of time livestock would be allowed to use an area.

Approximately 32,107 acres of livestock grazing allotments lie within designated municipal water supply areas under Alternatives A, B, C (Option 1), and D. Livestock grazing does not generally conflict with groundwater supplies; therefore, it would not be impacted by any of the municipal water supply actions identified under any of the alternatives.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Effects are the same as those under Effects Common to All Alternatives.

Individual Effects under Alternative B

Approximately 2,734 acres of livestock grazing allotments lie within wellhead protection zones under Alternative B. Action B-WR 1.5 directs the BLM to avoid impacts on wellhead protection zones, which would require extra management by grazing operators, such as fencing or increased livestock herding.

Approximately 185,767 acres of livestock grazing allotments lie within priority watersheds under Alternative B. Priority watersheds would be managed for multiple uses and could directly impact livestock grazing if the watershed becomes degraded and needs to be protected by actions such as increased livestock herding and or avoidance of degraded areas.

Permittees would be encouraged to file for water rights under Alternative B, which means they will have to pay to fund the projects if they want them. BLM will not fund projects if they do not have water rights.

Individual Effects under Alternative C

Option 1

Approximately 2,734 acres of livestock grazing allotments lie within wellhead protection zones under Alternative C, Option 1. Action C-WR 1.5 directs the BLM to exclude discretionary actions within wellhead protection zones, which would prevent livestock from grazing in these areas.

Approximately 185,458acres of livestock grazing allotments lie within priority watersheds under Alternative C, Option 1. Priority watersheds would be managed as exclusion areas and used only for the resource for which it was established as a priority. Management under this action would exclude grazing from the 185,458acres of priority watersheds and would reduce forage availability in the impacted allotments. Water availability also could be impacted. Management under this action would have the greatest direct impact on livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from water resources management.

Individual Effects under Alternative D

In addition to the impacts identified under Effects Common to All Alternatives, 2,623 of livestock grazing allotments lie within wellhead protection zones under Alternative D. Action D-WR 1.5 directs the BLM to avoid impacts on wellhead protection zones, which would require extra management by grazing operators, such as fencing or increased livestock herding.

The 184,643 acres of priority watersheds that overlap with livestock grazing allotments would be managed as avoidance areas under Alternative D. Designating priority watersheds as avoidance areas would require extra management by grazing operators, such as fencing or increased livestock herding to prevent the congregating livestock from degrading the watersheds. Impacts under this alternative would be similar to Alternative B and fewer than Alternative C.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to Alternatives A, B, C (Option 1), and D

Stand health treatments would improve the ecological condition of vegetation in forested areas, thereby increasing forage available for grazing.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from forest and woodland products management.

Individual Effects under Alternative D

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Weeds Management

Effects Common to Alternatives A, B, C (Option 1), and D

Encroachment of weeds into grazing areas reduces the preferred forage for livestock until treated. Actions to prevent and control invasive and noxious weeds using integrated weed management techniques could directly affect livestock grazing in the short term if livestock are excluded in the treatment areas until revegetation has taken place. Livestock grazing would improve over the long term as the ecological condition of vegetation in grazing allotments improves following restoration. In addition to the impacts identified under Effects Common to All Alternatives, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Eliminating chemicals to control noxious weeds could result in a greater rate of weed spread, as most alternate controls are not as effective or rapid enough to control the spread of weeds. Vegetation sites converted to noxious weeds would be lost to livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from weeds management.

Individual Effects under Alternative D

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Chemical and Biological Control

Effects Common to Alternatives A, B, C (Option 1), and D

Implementing chemical and biological control methods under all alternatives to control pests could indirectly impact livestock grazing by improving the rangeland health environment for livestock. For example, reducing the populations of Mormon Crickets would reduce the amount of degradation to the vegetative resource available for livestock grazing. Actions to prevent and control pests using pesticides and biological techniques could directly affect livestock grazing in the short term if livestock are excluded in the treatment areas until revegetation has taken place. Livestock grazing would improve over the long term as the ecological condition of vegetation in grazing allotments improves following restoration.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Eliminating the use of chemicals to control pests may result in a greater rate of infestation, as most alternate controls are not as effective or rapid enough to control the spread. Vegetation exposed to uncontrolled infestations could be lost to livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from chemical and biological control.

Individual Effects under Alternative D

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Vegetation—Rangeland Management

Effects Common to Alternatives A, B, C (Option 1), and D

Allowing vegetation treatment areas to rest would result in direct short-term limited livestock management impacts such as decreases in AUMs, livestock herding, pasture rotations, and exclusion from the treated area. In the long term, resting treated areas would enhance vegetation by allowing seedlings to establish, resulting in a sustained forage base. The shortest minimum rest time under the alternatives is two years, and the longest minimum rest time is five years. In addition to the impacts identified under Effects Common to All Alternatives, the following individual effects would impact livestock grazing:

Individual Effects under Alternative A

Impacts would be the same as identified under Effects Common to Alternatives A, B, C (Option 1), and D, except that they would be limited to at least two years or until monitoring objectives established in the Emergency Stabilization or Burned Area Rehabilitation Plans are achieved or until rehabilitation efforts are determined to be failures. Restoration of the crested wheatgrass seedings would allow operators to remove their cattle early from native pastures or pastures with riparian areas and go to the crested wheatgrass seedings. This would allow reduced use or critical growing season rest for the native species and allow for reduced use and a longer recovery period in the riparian areas.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D, except that livestock would be allowed to graze cheatgrass during April to control it for two years, before full livestock numbers return.

Restoration and enhancement of the crested wheatgrass seedings would allow operators to move their cattle early from native pastures or pastures with riparian areas to the crested wheatgrass seedings. This would allow reduced use or critical growing season rest for the native species and allow reduced use and a longer recovery period in the riparian areas. Prescriptive grazing could potentially provide additional options to livestock operators, while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Individual Effects under Alternative C

Option 1

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D, except that they would be limited to a minimum of five years.

Crested wheatgrass seedings would be allowed to convert back to native plant communities, which could reduce the amount of AUMs available for livestock consumption.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from rangeland management.

Individual Effects under Alternative D

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D, except that they would depend on various factors such as whether or not emergency stabilization and rehabilitation plan objectives are achieved, waiting until previously vegetated areas have regained vigor, or determining that rehabilitation efforts are a failure.

Restoration of the crested wheatgrass seedings would allow operators to move their cattle early from native pastures or pastures with riparian areas to the crested wheatgrass seedings. This would allow reduced use or critical growing season rest for the native species and allow reduced use and a longer recovery period in the riparian areas. Prescriptive grazing could potentially provide additional options to livestock operators, while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to Alternatives A, B, C (Option 1), and D

Riparian and wetland restoration has the potential to directly impact livestock grazing through adjustments in season of use, livestock numbers, and development of riparian objectives such as stubble height and bank alteration to ensure that the riparian habitat is meeting the standards for rangeland health.

Livestock that congregate in riparian areas can affect proper functioning condition by increasing erosion and adding turbidity to water sources. Livestock that congregate in riparian areas also increase fecal coliform and nitrate levels. Therefore, protecting riparian areas (changing season of use and bank trampling limitations or temporary exlosures)from grazing animals could allow riparian habitat to maintain or improve and indirectly provide cleaner and more dependable water sources for livestock. Wetland riparian areas and meadow habitats are also examples of key management areas for developing stocking levels during implementation level planning. BLM Technical Reference 4400-7, on page 54 "Desired Stocking Level," states, "The calculation of a desired stocking level also depends on the identification of a key management area. A key management area is an area of land that influences or limits the use of the land surrounding it. Examples of key management areas could be riparian, wetland or meadow areas surrounded by uplands. Maintaining proper use on the meadow could cause low use on the uplands. A key management area is the key area that overrides the indicators of the other key areas within the management unit. Management actions are based on the key management areas

In the meadow and upland example, the meadow and upland may each have a key area. Since the meadow is the key management area, if use exceeds the limits on the meadow but not on the uplands, the stocking level will be reduced to meet the riparian objectives although the uplands will also receive less use. If a riparian area is healthy the correlation is that the uplands are usually healthy.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Impacts are the same as under Effects Common to All Alternatives. In addition, riparian and wetland restoration has the potential to directly impact livestock grazing by requiring exclosures to be constructed or AUMs to be reduced. Structures would alter livestock movement and use patterns. Off-site water developments could be proposed as a mitigation measure to provide water for livestock or to keep livestock from accessing the springs and creeks for water. The cost of constructing these projects could financially impact the BLM and the permittees.

Individual Effects under Alternative B

Impacts are the same as under Alternative A, with the exception of reducing AUMs. More structural improvements would be applied to achieve PFC on 60 percent of the riparian wetland areas by 2028.

Effects under Alternative C

Option 1

Implementing a more aggressive PFC goal of 85 percent of the riparian areas achieving PFC by 2028 under Alternative C, Option 1 would have a high direct impact on livestock grazing. Under this alternative, there would be no fence construction to protect the riparian areas. Protection would occur by reducing livestock seasons of use, altering AUMs, closing areas to livestock grazing in addition to the measures identified under Effects Common to All Alternatives.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from vegetation- riparian and wetlands management.

Individual Effects under Alternative D

Impacts are the same as under Alternative A. However, BLM would look at utilizing natural processes to improve riparian health, as described under Alternative C, Option 1.

Effects from Fish and Wildlife Management

Effects Common to Alternatives A, B, C (Option 1), and D

Wildlife species could compete with livestock for forage, water, and cover when they occupy the same area. Big game species such as elk and deer compete for similar forage as cattle, sheep, and horses. During the fall, deer prefer the same browse species as sheep and cattle, creating an intensified competition for forage. Fish and wildlife habitat management activities would directly affect livestock grazing through restrictions on grazing management, such as increased rotation, timing, or season of use and/or reduced forage.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Under Alternative A, BLM would coordinate with NDOW to establish pioneering elk populations in potential habitat. Many times, elk and cattle share similar diets, depending on forage dynamics and cattle stocking rate (Greenwood 2007). Elk and cattle diets overlap, but they may use the forage at different times of the year (Greenwood 2007). Elk and livestock could compete for forage, water, and cover if these needs are in short supply. When forage is not available, it is likely that elk would resort to feeding on haystacks and commingling with livestock feed lines. There is a risk of the spread of brucellosis between elk and cattle when they commingle. Transmission of brucellosis has been a concern since the early 1900s, when the disease was discovered in both species. Cattle were immunized for brucellosis in the early 1940s, but wildlife was not treated to prevent brucellosis (Greenwood 2007). Elk and cattle separation may be necessary to prevent the disease from impacting the grazing management practices if the BLM accepted a recommendation from NDOW on elk establishment.

Protection of waterfowl habitat would occur without precluding multiple uses; therefore, no impacts on livestock grazing would occur.

Fencing out livestock from reservoirs that support fisheries would directly impact livestock grazing by reducing the amount of water available to the livestock. This impact could be mitigated by piping water off-site for livestock use. In active sheep allotments, bighorn sheep would not be introduced unless all conflicts are resolved; therefore, there would be no impacts on sheep operators. Providing additional water sources for wildlife under Alternative A could directly impact grazing by reducing competition for water and making available additional water sources. Developing spring sources with fencing under Alternative A would directly impact livestock grazing by providing and maintaining a more permanent water source for livestock.

Introducing wildlife in potential habitats could indirectly impact livestock grazing by increasing disturbance from recreational activities such as hunting and wildlife viewing. In order to achieve stream bank alteration percentages under Alternative A, implementation measures such as season of use, exclusion, reducing livestock numbers and rotational grazing practices could be applied.

Individual Effects under Alternative B

No elk establishment would be allowed under Alternative B, and no impacts on livestock grazing would result from elk and livestock competition.

Shorebird habitat would be protected under Alternative B without precluding multiple uses, including livestock grazing. No impacts on livestock grazing would occur.

Providing additional water sources under Alternative B would directly impact livestock grazing the same as under Alternative A. Developing spring sources that may be fenced on a case-by-case basis under Alternative B would directly impact livestock grazing by providing and maintaining a more permanent water source for livestock. This alternative may be more feasible financially for both the permittees and BLM.

In active sheep allotments, bighorn sheep would not be introduced unless all conflicts are resolved; therefore, there would be no impacts on sheep operators.

Introducing wildlife under this alternative would not interfere with other multiple uses; therefore, livestock grazing would not be affected.

Alternative B would protect and improve wildlife habitat by initiating land treatments by any means available to BLM (including the use of chemicals). Certain chemicals can be harmful to livestock adding a risk to livestock health; however the use of chemicals is usually more productive in securing a successful seeding. Vegetation treatment areas would be allowed to rest, which would result in short-term limited livestock management impacts such as decreases in AUMs, livestock herding, pasture rotations, and exclusion from the treated area. In the long term, resting treated areas would enhance vegetation by allowing seedlings to establish, perennial plants to recover, and a sustained forage base to develop.

In order to achieve stream bank alteration percentages of 20 percent of linear bank length on fishery streams, spring brooks, and lentic fishery resources and on those with sensitive channel types under Alternative B, implementation measures such as season of use, exclusion, reducing livestock numbers and rotational grazing practices could be applied.

Individual Effects under Alternative C

Option 1

Direct Impacts on livestock grazing from possible elk establishment would be greatest under Alternative C, Option 1 because the BLM would accept an elk establishment recommendation from NDOW.

Bighorn sheep would not be introduced on active preference sheep allotments, so there would be no impacts on sheep operators. Reintroducing native wildlife into historic habitat areas may indirectly impact livestock by increasing disturbance from recreational activities such as hunting and wildlife viewing.

Alternative C, Option 1 would protect and improve wildlife habitat by initiating land treatments without the use of chemicals, which would be safer for the livestock but might not be as successful. Vegetation treatment areas would be allowed to rest, which would result in short-term limited indirect livestock management impacts such as decreases in AUMs, livestock herding, pasture rotations, and exclusion from the treated area. In the long term, resting treated areas would enhance vegetation by allowing seedlings to establish, perennial plants to recover, and a sustained forage base to develop.

Fencing out livestock from shorebird habitat and reservoirs that support fisheries would directly impact livestock grazing by reducing the amount of water available to the livestock. This impact could be mitigated by piping water off site for livestock use.

Not providing artificial water sources under Alternative C, Option 1 would directly impact livestock grazing during droughts by increasing competition between wildlife and livestock. Springs would not be developed and fenced under Alternative C, Option 1. In order to protect springs, increased livestock management such as season of use would be applied.

Actions to improve or maintain stream and shoreline channel stability and to limit annual stream bank alteration impacts would have the greatest direct impact on livestock grazing management by setting stricter regulations under Alternative C, Option 1.

In order to achieve stream bank alteration percentages of 10 percent or less of linear bank length on fishery streams, spring brooks, and lentic fishery resources and 5 percent or less on those with sensitive channel types, implementation measures such as season of use, exclusion, reducing livestock numbers, and rotational grazing practices could be applied. The aforementioned goals would limit the greatest amount of time cattle could spend in the riparian area, resulting in the greatest direct impact on livestock grazing management.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from fish and wildlife management.

Individual Effects under Alternative D

Impacts on livestock grazing from possible elk establishment are the same as under Alternative A.

Shorebird habitat protection measures and fencing reservoirs that support fisheries would directly impact livestock the same as under Alternative C, Option 1. Providing additional water sources under Alternative D would directly impact livestock grazing the same as under Alternative A.

In active sheep allotments, bighorn sheep would not be introduced unless all conflicts are resolved; therefore, there would be no impacts on sheep operators.

Wildlife would only be introduced if they do not displace native wildlife. This could indirectly impact livestock by increasing disturbance from recreational activities such as hunting and wildlife viewing.

Impacts from land treatments would be similar to those under Alternative B.

In order to achieve stream bank alteration percentages of 20 percent or less of linear bank length on fishery streams, spring brooks, and lentic fishery resources and 10 percent or less on those with sensitive channel types under Alternative D, implementation measures such as season of use, exclusion, reducing livestock numbers, and rotational grazing practices could be applied. The 10 percent or less sensitive channel type goal would limit the amount of time cattle could spend in the riparian area, creating a greater impact on livestock grazing management.

Direct impacts on livestock grazing from spring development would be the same as under Alternative A.

Effects from Special Status Species Management

Effects Common to Alternatives A, B, C (Option 1), and D

Protecting special status plants and special status species habitat could directly affect livestock grazing by limiting grazing areas and seasons of use. Special status species habitats also would directly influence location, timing, and cost of range improvements.

Conversely, protecting riparian areas that support special status species from grazing animals could provide cleaner and more dependable water sources for livestock in the long term.

Individual Effects under Alternative A

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Allowing for prescriptive grazing on a case-by-case basis could directly provide additional flexibility and the ability to accrue extra income for livestock operators, while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Individual Effects under Alternative C

Option 1

By not allowing for prescriptive grazing, livestock operators do not benefit from the flexibility allotted them while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from special status species management.

Individual Effects under Alternative D

Impacts are the same as under Alternative B.

Effects from Wild Horse and Burro Management

Effects Common to Alternatives A, B, C (Option 1), and D

When livestock and wild horses occupy the same area, their needs for water and forage are competitive. In extreme circumstances, horses could outcompete livestock temporarily and could preclude livestock access to certain water sources. Livestock and wild horse and burro conflicts could include damage to fences. Competition for water and forage would be mitigated through adjustments in season of use, AUMs, AMLs and water developments, which would improve distribution of livestock and wild horses and burros, therefore adjustments to both livestock and WHB may occur.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the individual effects below would impact livestock grazing.

Individual Effects under Alternative A

Removing all WHBs from HMAs within checkerboard lands would reduce competition with livestock for forage, water, and shelter in those allotments. Gathering WHB before AML levels are exceeded reduces competition for food, water, and shelter in grazing allotments and maintains or improves rangeland health. Using fertility control inhibitors to slow population growth rates of

WHB would decrease competition for food, water, and shelter with livestock and would assist in maintaining a healthy rangeland environment.

Individual Effects under Alternative B

Gathering WHB before AML levels are exceeded, and using fertility control inhibitors on WHB would directly impact livestock grazing the same as under Alternative A.

Implementing appropriate management actions primarily for WHB over livestock under conditions where allotment-specific objectives and the Standards for Rangeland Health are not being met would directly impact grazing by maintaining AUMs for livestock and by reducing AMLs for wild horses and burros.

Under Alternative B, the Nightingale and Shawave Mountain HMAs would be removed and the Snowstorm Mountain HMA would be slightly expanded, resulting in a decrease in approximately 190,630 acres of HMAs that overlap with grazing allotments. Reducing the amount of acreage of HMAs that overlap with the Bluewing Seven Troughs Allotment reduces competition among livestock and wild horses and burros for forage, water, and shelter. The increased acreage in the Bullhead Allotment could increase competition between livestock and wild horses.

Alternative B would reduce competition greater than any of the other alternatives.

Individual Effects under Alternative C

Option 1

Adjusting HMA boundaries and removing WHBs from the checkerboard portion of the Nightingale and Shawave Mountain HMAs to eliminate checkerboard land issues would decrease competition with livestock for forage, water, and shelter in areas of checkerboard lands.

Under Alternative C, Option 1, approximately 20,500 acres of HMAs within grazing allotments would be reduced due to boundary adjustments (slight increase in the McGee HMA and a fair decrease in the Shawave Mountain and Nightingale HMAs). This action reduces competition between livestock and wild horses and burros for forage, water, and shelter and represents less of an impact than under Alternative B or D but a greater impact than under Alternative A.

Gathering excess WHB to achieve AML by using no less than a four-year gather cycle could impact grazing if excess numbers of WHB that compete for food, water, and shelter in grazing allotments were present before the four-year time period.

Not using fertility control measures on WHB could lead to unmanageable numbers of WHB during highly fertile breeding years, increasing the competition for food, water, and shelter with livestock and increasing degradation of the rangeland environment.

Implementing appropriate management actions primarily for T&E species over WHB, under conditions where allotment-specific objectives and the SRH are not being met, would impact grazing by disproportionately reducing AML versus AUM. Therefore, this action would directly reduce impacts on livestock grazing by decreasing potential WHB competition.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from WHB management.

Individual Effects under Alternative D

Deleting the checkerboard portion of the Nightingale and Shawave Mountain HMAs would have the same impacts on livestock grazing as under Alternative C, Option 1. Gathering WHB before AML levels are exceeded and using fertility control inhibitors on WHBs would directly impact livestock grazing the same as under Alternative A.

Under Alternative D, approximately 41,536 acres of HMAs within grazing allotments would be reduced due to boundary adjustments, with the exception of the Snowstorm Mountain HMA, which would be slightly expanded. This action reduces competition between livestock and wild horses and burros for forage, water, and shelter and represents less of an impact than under Alternative B, but a greater impact than under Alternatives A or C (Options 1 and 2).

Implementing appropriate management actions would occur to livestock or WHB relative to the degree to which each animal species is contributing to the non-attainment of resource objectives (if known) or proportionally (if unknown). This could directly impact livestock grazing by either reducing livestock AUMs or wild horse and burro AMLs.

Effects from Wildland Fire Management

Effects Common to Alternatives A, B, C (Option 1), and D

Wildland fire would have varying effects on livestock grazing, depending on fire size and intensity, the timing of the fire, and fuel moisture content. Wildland fire would initially displace livestock, and depending on the proximity of the livestock to the fire, livestock could be stressed, injured, or killed. Wildland fire would remove vegetation and forage over the short term. Over the long term, wildland fire could improve forage production, especially when post-fire management efforts are implemented. ES&R would close areas to livestock grazing in order to protect seeded species and increase success, thereby protection the seeded species from overgrazing in the short term and establishing a stable forage base in the long term.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Prescribed fire would be used to reduce or rejuvenate shrub cover and increase herbaceous forage for grazing animals. Prescribed fire would result in short-term deferment of livestock grazing to allow for herbaceous recovery. Increased sediment loads following prescribed fires may fill stock ponds, thereby reducing capacity and putting additional burden on the permittee to empty and clean ponds. Prescribed fire may impact range improvements, enhance forage availability and production, and reduce the likelihood of wildland fire occurrence. Short-term impacts of prescribed fire could include an increase of cheatgrass following treatment in areas where cheatgrass is the dominant understory grass. Prescribed fire could be used in mountain big sagebrush communities in late

ecological status to provide diversity of age classes for shrubs. Prescribed fire could also be used as a pre-treatment for weed control prior to an herbicide application.

Zero acres of livestock grazing allotments would be considered suitable for allowing fire for resource benefit. Allow fire for resource benefit is a treatment that involves taking advantage of a naturally ignited wildland fire in an area where fire would benefit resources. Having no areas designated to allow fire for resource benefit would impact livestock grazing. Enhancement of the livestock forage base would not occur as mature and decadent stands of fire resistant vegetation would not be allowed to burn. Species composition would not improve. Allowing natural fire would promote the establishment of forbs and grasses. Species composition would be improved. In the long term, livestock would not have a sustained forage base in certain areas if fire is not allowed for resource benefit.

Individual Effects under Alternative B

Under Alternative B, 107,757 acres of livestock grazing allotments would be considered suitable for allowing fire for resource benefit. In the short term, livestock would lose forage in burned areas. In the long term, allowing fire for resource benefit could improve forage production by restructuring the age class of shrubs and increasing the density and composition of grasses and forbs.

Impacts from prescribed fire are the same as under Alternative A.

Individual Effects under Alternative C

Option 1

Zero acres of livestock grazing allotments would be considered suitable for allowing fire for resource benefit under Alternative C, Option 1. Impacts are the same as those under Alternative A.

Prescribed fire would not be used under Alternative C, Option 1, which would avoid short-term deferment of livestock grazing during recovery or increased sediment loads in stock ponds. Forage may not be enhanced in the long term, however, and the likelihood of wildland fire occurrence could be increased without the use of prescribed fire.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from wildland fire management.

Individual Effects under Alternative D

Under Alternative D, 21,753 acres of livestock grazing allotments would be considered suitable for allowing fire for resource benefit. Impacts from allowing fire for resource benefit are the same as those under Alternative B but would be limited to a much smaller acreage.
Impacts from prescribed fire are the same as under Alternative A.

Effects from Cultural Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, management actions associated with cultural resources affect relatively small localized areas and would have negligible effects on livestock forage. Even under the most intensive management, such as excavation, the acreage disturbed would be small. Fencing some cultural sites could exclude grazing and cause a loss of available forage. Restrictions on surface-disturbing and other disruptive activities near cultural sites could require that some range improvements be modified or relocated, and in rare cases improvements could be precluded.

Individual Effects under Alternative A

The indirect short-term impact of maintaining culturally sensitive areas as open to OHV use would be a reduction in forage and temporary displacement of livestock. The indirect long-term impacts of maintaining culturally sensitive areas as open to OHV use include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment.

Individual Effects under Alternative B

Indirect impacts on livestock grazing by maintaining culturally sensitive areas as open to OHV use would be the same as under Alternative A.

Individual Effects under Alternative C

Option 1

Limiting OHV use in culturally sensitive areas would indirectly affect livestock grazing by keeping OHVs on specific routes and reducing the conflicts that can arise with livestock and OHV interactions (such as harassment of livestock). Limiting OHV use to designated trails, however, could impact permittees that use OHVs to herd cattle. Closing Class I segments of the National Historic Trail segments to OHV use could prevent permittees from accessing their cattle in a timely fashion where allotments overlap with these trail segments.

Option 2

Since there is no livestock grazing under Option 2, there are no impacts on livestock grazing from cultural resources management.

Individual Effects under Alternative D

Indirect impacts on livestock grazing by limiting OHV use to designated trails in culturally sensitive areas and closing Class I segments of the National Historic Trail segments to OHV use would have the same impacts on livestock grazing as under Alternative C, Option 1.

Effects from Tribal Consultation

Effects Common to Alternatives A, B, C (Option 1), and D

No specific effects have been identified from management actions related to tribal consultation. The

BLM would continue to consult with tribes regarding treaty rights, cultural access, and use of plants, animals, fish, and habitats. Consultation could result in identifying areas where current or proposed livestock grazing could need to be modified to accommodate tribal uses or to avoid resources important to tribes. However, it is unlikely that accommodating tribal uses would be inconsistent with providing opportunities for grazing within the WDO in the long term.

Individual Effects under Alternative A

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from tribal consultation.

Individual Effects under Alternative D

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Paleontological Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, management actions associated with paleontological resources affect relatively small localized areas and would have negligible effects on livestock forage. Fostering public awareness of paleontological resources could increase human and livestock interactions in areas that contain deposits, thereby indirectly increasing the amount of disturbance and harassment caused by these interactions.

Individual Effects under Alternative A

Fostering public awareness of paleontological resources could increase human and livestock interactions in areas that contain deposits, thereby indirectly increasing the amount of disturbance and harassment caused by these interactions.

Individual Effects under Alternative B

Preventing discretionary activities, such as livestock grazing, on public lands unless impacts could be mitigated could directly impact grazing by excluding grazing in these areas. Fostering public awareness of paleontological resources would indirectly impact livestock grazing the same as under Alternative A.

Individual Effects under Alternative C

Option 1

Impacts from preventing discretionary activities on public lands unless impacts could be mitigated would directly impact livestock grazing the same as under Alternative B. Prohibiting OHV use in areas that contain vulnerable paleontological deposits could reduce OHV and livestock interactions but would directly prevent permittees from accessing their cattle in a timely fashion where allotments contain these deposits. Fostering public awareness of paleontological resources only if it does not promote increased visitation to sites under Alternative C, Option 1 would not impact livestock grazing because visitor use would not increase and visitor and livestock interactions would not increase.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from paleontological resources management.

Individual Effects under Alternative D

Impacts from preventing discretionary activities on public lands unless impacts could be mitigated would directly impact livestock grazing the same as under Alternative B. Impacts from prohibiting OHV use in areas that contain vulnerable paleontological deposits would have the same indirect impacts as under Alternative C, Option 1. Fostering public awareness of paleontological resources would indirectly impact livestock grazing the same as under Alternative A.

Effects from Visual Resources Management

Table 4-44 shows the VRM classes that overlay grazing allotments under each alternative.

Table 4-44
VRM Designations within Grazing Allotments

VRM Class	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
I	406,328	403,648	436,478	0	403,648
II	319,961	375,629	2,822,951	0	375,629
III	662,470	2,201,765	2,667,695	0	220,1765
IV	5,183,180	3,660,228	744,953	0	366,0228

Source: BLM 2007

Effects Common to Alternatives A, B, C (Option 1), and D

Livestock and their handling facilities may be authorized under all VRM classes; however, the design and placement of new range improvements in VRM Class I and II areas would have to be constructed in such a way as to repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape, as identified in BLM Handbook H-8410-1. Specifically constructing range improvements to follow the BLM Handbook H-8410-1

could directly place a financial burden on permittees and the BLM Class III objectives state that the level of change to the character of the landscape should be moderate; however, management activities could dominate the view and be the major focus of viewer attention (BLM Handbook H-8410-1) (BLM 1986). Class IV objectives state that the level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements. Class III and IV objectives would have a minimal impact on livestock grazing facility management.

In general, VRM classes that restrict surface-disturbing activities would indirectly help to maintain forage levels by reducing activities that could eliminate forage, harass livestock and increase the potential for noxious or invasive weeds.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Five percent of the available grazing acreage would fall within VRM Class I areas, and four percent would fall within VRM Class II areas..

Individual Effects under Alternative B

Table 4-44, VRM Designations within Grazing Allotments, displays VRM class designations within available grazing allotments under Alternative B. Five percent of the available grazing acreage would fall within VRM Class I areas, and five percent would fall within VRM Class II areas. The indirect impacts on new range improvements would be similar to Alternative A and less than the other alternatives.

Individual Effects under Alternative C

Option 1

Table 4-44, VRM Designations within Grazing Allotments, displays VRM class designations within available grazing allotments under Alternative C, Option 1. Five percent of the available grazing acreage would fall within VRM Class I areas, and 34 percent would fall within VRM Class II areas. The indirect impacts on new range improvements would be greater than under all of the other alternatives because of the greatest amount of acreage is designated Class II.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from visual resources management.

Individual Effects under Alternative D

Table 4-44, VRM Designations within Grazing Allotments, displays VRM class designations within available grazing allotments under Alternative D. Five percent of the available grazing acreage falls within VRM Class I areas, and 5 percent falls within VRM Class II areas. The indirect impacts on

new range improvements are the same as Alternatives A and Band less than under Alternative C, Option 1.

Effects from Cave and Karst Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

Livestock do not generally graze on steep slopes along hillsides, where caves tend to be located. Caves that are accessible to livestock do not contain forage; however, if the caves are protected or fenced, this could directly impact livestock grazing by reducing a source of shade or shelter from inclement weather.

Individual Effects under Alternative A

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from cave and karst resources management.

Individual Effects under Alternative D

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Livestock Grazing Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, livestock grazing on public lands provides a source of income to the permittees within the WDO. Impacts from livestock grazing on the livestock grazing program would primarily be related to annual forage removal. Implementing BMPs and grazing management systems that achieve the Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health would improve forage conditions over the long term, indirectly improving livestock health and increasing conception rates.

If monitoring data indicate that impacts on resources are occurring from livestock grazing, then appropriate adjustments would be made to livestock AUMs, seasons of use, or utilization levels. Adjusting AUMs could potentially impact the rancher negatively or positively depending on the situation. Adjusting seasons of use could limit permittee flexibility; reducing the amount of available

forage in the short term. Livestock removal during the critical growth period also may coincide with the rancher's farming activities, thereby limiting where ranchers could put their livestock.

In the long term, meeting utilization levels could lead to attainment of standards for rangeland health, which would create a sustained forage yield.

In areas where allotments coincide with HMAs, livestock operators would not be authorized to graze domestic horses and burros in order to prevent wild horse and domestic horse conflicts. This may impact permittees that are authorized to graze horses on public lands by limiting the areas of use to outside of HMAs.

In areas where allotments coincide with existing bighorn sheep populations, conversion of AUMs from domestic cattle to domestic sheep would only be allowed where conflicts could be mitigated (e.g., buffer zones). This may impact permittees that are authorized to graze domestic sheep on public lands by limiting the areas of use to portions of those allotments where bighorn sheep populations do not exist.

In areas where allotments coincide with potential bighorn sheep habitat, conversion of AUMs from domestic cattle to domestic sheep could be allowed; however, if bighorn sheep moved into the area, mitigation such as buffer zones could be implemented, impacting the acreage of grazing and AUMs available to the permittee.

Allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would allow flexibility for the permittee to efficiently use the allotments permitted to them.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

There would be no net change in the lands available for livestock grazing or the assigned AUMs under Alternative A. Under Alternative A, forage banks would not be permitted. Forage banks are allotments where a previous permit has been relinquished or cancelled and could be used to provide alternate grazing opportunities for ranchers after wildfires, restoration projects and during droughts.

Not providing forage banks could take away an opportunity to help permittees continue to graze their livestock on public lands when their own allotment is closed due to an emergency situation, negatively impacting the permittees financially.

Allowing prescriptive grazing and temporary nonrenewable (TNR) grazing on acquired lands on a case-by-case basis provides an opportunity for ranchers to enhance their income and provide alternate forage for their cattle.

Permittees would be authorized to construct and maintain range improvement projects through issuance of cooperative agreements, which would allow for the continuance of grazing operations on public land.

Impacts on livestock grazing from allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D. Under Alternative A, where new waters are developed for livestock, the permittee would be required to provide water for wildlife only when livestock are present. This management action should not have any added financial impacts on the permittee.

Operator flexibility could be increased by permitting prescribed grazing within exclosure areas.

Individual Effects under Alternative B

Alternative B allows for continued use of the public land for livestock grazing, with the same acreage and AUMs allotted as Alternative A. Impacts from using TNR and from constructing and maintaining range improvement projects also are the same as under Alternative A.

Alternative B gives the permit holder the responsibility of approaching the BLM with an annual grazing plan, which would allow an opportunity for ranchers to expedite the process to expand their grazing business.

Adjusting grazing allotment boundaries would increase or decrease the amount of acreage within an allotment. An increase or decrease in acreage within an allotment could correspond to an increase or decrease in AUMs harvested, which could either benefit or impact a permittee financially. In addition, an increase in acreage could allow for more flexibility in the grazing rotation.

Impacts on livestock grazing from allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D. Under Alternative B, impacts on permittees developing new waters for livestock would be the same as identified under Alternative A.

Providing overflow ponds on range improvement projects would result in additional water storage, allowing the permittee more time to conduct repairs on the range improvement without running out of water for livestock. However, overflow ponds can be a source of contaminated water to the livestock, as they tend to congregate and defecate within the pond area.

Under Alternative B, exclosures would be open to grazing unless site-specific allotment terms and conditions, objectives, and land health standards are not being achieved. This could allow the operator more flexibility in managing their livestock over a larger area.

Individual Effects under Alternative C

Option 1

Under Alternative C, Option 1, 297,999acres of livestock grazing would be closed.

Under Alternative C, Option 1, other resource values would be considered primary to livestock grazing. Therefore, livestock authorizations would only be issued if livestock grazing is found to be complimentary to other resource values. If livestock grazing is not found to be complimentary to other resource values, then no authorization would be issued, resulting in the same impacts as identified under Option 2 below.

Forage banks would be permitted under Alternative C, Option 1 under emergency situations (e.g., wildfire, drought, insect infestation, etc.). Providing forage banks for the permittees would allow them to continue to graze their livestock on public lands when their own allotment is closed due to an emergency situation, thus limiting financial impacts. Management responsibilities and priority usage could present conflicts, however, between livestock grazing permittees and the BLM.

Impacts on livestock grazing from retiring grazing permits are the same as those under Alternative A.

Closing acquired lands to livestock grazing would prevent an opportunity for ranchers to expand their grazing business. Excluding TNR use would prevent an opportunity for ranchers to enhance their income and provide alternate forage for their cattle.

Permittees would be authorized to construct and maintain range improvement projects through issuance of cooperative agreements, which would allow grazing operations to continue on public land only if compatible with other resources and uses. If range improvements are not compatible with other resources and uses, they would be removed or modified. Removing or modifying range improvements could impact livestock grazing by reducing the amount of AUMs authorized due to resource impacts from concentrated livestock. Modifications to range improvements could have a financial implication to the permittee, depending on the type modification needed to make the project compatible with other resources and uses.

No more than two consecutive years of grazing use during the critical growing period would be allowed under Alternative C, Option 1. Utilizing key forage species would be maintained at 30 percent or less, which would limit the number of AUMs harvested by placing constraints on livestock numbers or use dates.

Impacts from adjusting grazing allotment boundaries would be the same as under Alternative B; however, a greater number of allotments have been identified for adjustment.

In areas where allotments coincide with potential habitat or existing bighorn sheep populations, Alternative C, Option 1 does not allow conversion from domestic cattle to domestic sheep. This may impact permittees that are authorized to graze domestic sheep on public lands by limiting the areas of use for grazing to those allotments that do not have potential bighorn sheep habitat or existing bighorn sheep populations.

Conversion from domestic sheep to cattle would be promoted under Alternative C, Option 1 in order to endorse bighorn sheep population and to increase their habitat range throughout the WDO.

Under Alternative C, Option 1, where new waters are developed for livestock in big game habitat or HMAs, the permittee would be required to provide water for wildlife and wild horses and burros even when livestock are not present. This management action could financially impact permittees by requiring them to maintain water at the site, even when livestock are not allowed during a specific season of use.

Overflow ponds would not be developed under Alternative C, Option 1. If range improvements malfunction and overflow ponds are not present, livestock would be forced to find an alternate source of water until such repairs could be made.

Closing all exclosure areas to livestock grazing could reduce the amount of flexibility a permittee has in managing his livestock; however, it could allow the permittee to achieve allotment-specific objectives without intensive livestock management (e.g., herding).

Option 2

Livestock grazing on public land is an important source of income to ranchers in Nevada. As identified in the Winnemucca RMP/EIS Socioeconomic Report (BLM 2006c), cattle and calf production in Nevada has remained relatively stable, ranging from 152,915,000 pounds in 1994 to 171,335,000 pounds in 2003. Gross income has increased over time from $132,388,000 in 1994 to $185,205,000 in 2003 and is expected to continue.

The BLM manages grazing on public lands by issuing grazing permits. Approximately 12 percent of the fees collected from grazing permits are returned to the state of Nevada (BLM 2006c). In addition, Congress appropriates funds for payments in lieu of taxes to eligible local governments each year as income generated from the use of public land for livestock grazing. Eliminating livestock grazing on public lands would impair the livelihood of ranchers in the WDO and would decrease associated revenue to state and local governments.

Eliminating grazing on public lands could reduce erosion caused by high livestock use, improving upland, riparian and wetland habitat at a faster rate. Conflicts between livestock and wild horses, burros, and wildlife would be eliminated. However, eliminating grazing would allow vegetation to build up faster on rangelands and increase the chances of overgrown vegetation becoming more susceptible to fire and disease.

Range improvements that are not compatible with other resources and uses would be removed. BLM would be required to compensate the permittees for the range improvement projects constructed under a cooperative agreement in accordance with 43 CFR 4120.3-6 (c).

Individual Effects under Alternative D

Under Alternative D, 319,328acres of livestock grazing would be closed. Impacts on livestock grazing from implementing forage bank usage are the same as under Alternative C, Option 1.

The impacts from allowing prescriptive grazing on acquired lands are the same as those identified under Alternative A; however, after an implementation plan is developed, the available AUMs may become a permanent part of a permit, or livestock grazing could be excluded based on other resource concerns or priorities. Excluding grazing would have a financial impact on a permittee, as identified under Alternative C, Option 1.

Impacts on livestock grazing from allowing TNR applications would be contingent on meeting specific criteria. If the criteria are met, TNR would be authorized and impacts would be the same as under Alternatives A and B. If criteria are not met, BLM would have to undertake NEPA in order to implement TNR. The outcome of NEPA could prevent the approval of TNR in situations where other resources would be impacted, thereby preventing an opportunity to provide alternative forage for livestock and enhance a permittee's income.

Permittees with a good record of past project maintenance would be authorized to construct and maintain range improvement projects through issuance of cooperative agreements, which would

allow for the continuance of grazing operations on public land. Permittees with a poor record would have to maintain existing projects to bureau specifications prior to any new projects being authorized, which could have a high financial impact on permittees at one time as opposed to smaller maintenance costs over a longer period of time.

No more than three consecutive years of grazing use during the critical growing period would be allowed under Alternative D. Utilization of key forage species would be maintained at 40 percent or less, which would limit the number of AUMs harvested by placing constraints on livestock numbers or use dates.

Impacts from adjusting grazing allotment boundaries would be the same as under Alternative B; however, a greater number of allotments have been identified for adjustment.

Impacts on livestock grazing from allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Under Alternative D, impacts on permittees developing new water sources in big game habitat and HMAs for livestock would be the same as Alternative C, Option 1.

Under Alternative D, overflow ponds would not be permitted on surface water sources such as springs or creeks, which would have the same impact on livestock grazing as Alternative C, Option 1. On sites with water wells overflow ponds would be encouraged, which would have the same impact on livestock grazing as Alternative B.

Permitting prescribed grazing within exclosure areas would impact livestock grazing the same as Alternative A.

Effects from Minerals Management

Table 4-45 displays the acreages of salable mineral designations within available grazing allotments.

Table 4-45
Salable Mineral Designations within Grazing Allotments

	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Acres closed to mineral material sale	**403,253**	**404,984**	**745,214**	**0**	**686,577**
Acres open to mineral material sale of any type	**6,223,897**	**6,234,388**	**5,891,965**	**0**	**5,928,943**
Acres open to permitted government agencies	0	815,647	3,377,817	0	1,713,606
Acres open to sale*	6,223,897	4,075,187	2,514,148	0	3,088,042
Acres open to sale* with seasonal restrictions	0	1,343,544	0	0	1,127,295

Source: BLM 2007a

*Open with standard operation terms and stipulations

Table 4-46 displays the acreages of fluid mineral leasing designations within available grazing allotments.

Table 4-46
Fluid Mineral Designations within Grazing Allotments

	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Acres closed to leasing	**432,870**	**1,084,815**	**4,119,889**	**0**	**1,008,135**
Acres open to leasing of any type	**6,194,280**	**5,689,644**	**2,517,287**	**0**	**5,459,996**
Acres open to leasing*	6,165,557	4,074,311	2,518,287	0	3,604,032
Acres open to leasing* with seasonal closures	0	1,19,573	0	0	1,558,056
Acres open to leasing[2] with No Surface Occupancy	28,723	195,780	0	0	297,908

Source: BLM 2007a
*Open with standard lease terms and stipulations

Table 4-47 displays the acreages of solid mineral leasing designations within available grazing allotments.

Table 4-47
Solid Mineral Designations within Grazing Allotments

	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Acres closed to leasing	**402,624**	**1,084,791**	**4,120,503**	**0**	**1,144,022**
Acres open to leasing of any type	**6,224,527**	**5,542,360**	**2,516,675**	**0**	**5,890,383**
Acres open to leasing*	0	4,074,446	2,516,675	0	3,603,931
Acres open to leasing* with seasonal closures	0	1,272,216	0	0	1,557,927
Acres open to leasing* with No Surface Occupancy	0	195,698	0	0	297,961

Source: BLM 2007a
*Open with standard lease terms and stipulations

Table 4-48 displays the acreages of locatable mineral leasing designations within available grazing allotments.

Table 4-48
Locatable Mineral Designations within Grazing Allotments

	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Discretionary Closures	**6,543**	**6,543**	**253,888**	**0**	**27,331**
Acres open to leasing of any type	**6,632,668**	**6,632,668**	**6,371,230**	**0**	**6,588,518**
Acres open to leasing*	2,659,806	2,659,806	3,069,132	0	3,736,015
Acres open to leasing* with seasonal closures	3,972,862	3,972,862	3,302,098	0	2,852,503

Source: BLM 2007a
*Open with standard lease terms and stipulations

Effects Common to Alternatives A, B, C (Option 1), and D

General

During the exploration and testing phase of mineral development, direct impacts on livestock grazing would be minimal due to the small amount of acreage affected. Mineral development directly affects large areas of grazing in the short term during construction of wellpads, roads, pipelines, and other facilities. Impacts include loss of forage, reduced forage palatability because of dust on vegetation, restriction of livestock movement, harassment and temporary displacement of livestock. In the long term, a smaller amount of permanent grazing acreage is lost during mining operations. Mining companies could work with livestock permittees to mitigate impacts on water by producing off-site water developments.

Fluid

In addition to the general mineral development impacts mentioned above, produced water from oil and gas and geothermal mining operations could be made available to livestock for use if water quality were sufficient. This additional water could increase livestock distribution and available forage for livestock, wildlife, WHBs, and other uses.

Locatable

Approximately 96 to 99 percent of available livestock grazing acreage would be open to locatable mineral leasing under all of the alternatives, and impacts on livestock grazing are the same for all alternatives and are identified under General impacts, above.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Salable

Ninety-four percent of available livestock grazing acreage would be open to mineral material sales under Alternatives A, representing the greatest impact on livestock grazing.

Fluid

Ninety-nine percent of available livestock grazing acreage would be open to fluid mineral leasing under Alternative A, representing the greatest impact on livestock grazing.

Solid

Ninety-four percent of available livestock grazing acreage would be open to fluid mineral leasing under Alternative A, representing the greatest impact on livestock grazing.

Individual Effects under Alternative B

Salable

Table 4-45 displays the acreages of salable mineral designations within available grazing allotments. Impacts are the same as identified under Alternative A.

Fluid

Table 4-46 displays the acreages of fluid mineral leasing designations within available grazing allotments. Eighty-four percent of available livestock grazing acreage would be open to fluid mineral leasing under Alternative B. Impacts on livestock grazing are similar to but less than under Alternative A.

Solid

Table 4-47 displays the acreages of solid mineral leasing designations within available grazing allotments. Eighty-four percent of available livestock grazing acreage would be open to solid mineral leasing under Alternative B. Impacts on livestock grazing are similar to but less than under Alternative A.

Individual Effects under Alternative C

Option 1

Salable

Table 4-45 displays the acreages of salable mineral designations within available grazing allotments. The greatest amount of acreage closed to salable disposal would be under Alternative C, Option 1, so the most impacts would occur under Alternative C, Option 1.

Fluid

Table 4-46 displays the acreages of fluid mineral leasing designations within available grazing allotments. Under Alternative C, Option 1, 38 percent of available livestock grazing acreage would be open to fluid mineral leasing and would represent the least amount of impacts on livestock grazing.

Solid

Table 4-47 displays the acreages of solid mineral leasing designations within available grazing allotments. Under Alternative C, Option 1, 38 percent of available livestock grazing acreage would be open to solid mineral leasing and would represent the least amount of impacts on livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from mineral resources management.

Individual Effects under Alternative D

Salable

Table 4-45 displays the acreages of salable mineral designations within available grazing allotments. Under Alternative D, 90 percent of available livestock grazing acreage would be open to mineral material sales and would represent the least amount of impacts on livestock grazing.

Fluid

Table 4-46 displays the acreages of fluid mineral leasing designations within available grazing allotments. Eighty-four percent of available livestock grazing acreage would be open to fluid mineral leasing under Alternative D. Impacts on livestock grazing are similar but less than Alternative A.

Solid

Table 4-47 displays the acreages of solid mineral leasing designations within available grazing allotments. Eighty-four percent of available livestock grazing acreage would be open to solid mineral leasing under Alternative D. Impacts on livestock grazing are similar to but less than Alternative A.

Effects from Recreation, Visitor Outreach, and Services Management

Table 4-49 displays OHV designations within grazing allotments by alternative.

Table 4-49
OHV Designations within Grazing Allotments

OHV Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Open	6,216,854	1,276,227	0	0	273,793
Limited	402,892	5,065,902	6,575,638	0	6,305,891
Closed	24,834	24,833	56,752	0	35,379
Total	6,644,580	6,366,962	6,632,390	0	6,615,063

Source: BLM 2007a

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term impacts of recreation activities on livestock grazing include loss of forage and temporary displacement of livestock. Long-term impacts of recreation on livestock include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment caused by increased levels of human activities. SRMAs that manage for increased OHV use and access would increase the impacts stated above. SRMAs that manage for a more primitive recreational experience would decrease the impacts stated above. Areas that are limited or closed to OHV use under any of the alternatives can impact livestock grazing by limiting the permittee's use of OHVs, which are often used to herd and check on cattle. Any development of reservoir sites for water-based recreation could potentially provide an additional source of water for livestock.

Individual Effects under Alternative A

Approximately one percent (98,874 acres) of the 8,232,727acres of available grazing areas would be located in SRMAs under Alternative A. Impacts on livestock grazing would be localized to the Alder Creek, Dyke Hot, Knott Creek, and Pine Forest Allotments, which are being managed for a primitive type of recreation that has minimal impacts on livestock grazing. Alternative A would have the fewest impacts on livestock grazing from SRMA management.

Under Alternative A, 94 percent (6,216,854 acres) of available grazing areas would continue to be designated as open to OHV use (Table 4-49, OHV Designations within Grazing Allotments). Increased demand for OHV use could impact livestock grazing by increasing human-caused noise, dust, and vegetation disturbance and by allowing greater opportunity for the harassment of grazing animals.

Individual Effects under Alternative B

Approximately 14 percent (1,176,292 acres) of the 8,232,727 acres of available grazing areas would be located in SRMAs, a 15 percent increase from Alternative A. The Winnemucca SRMA would provide for the greatest amount of conflict between livestock grazing and recreational activities, so Alternatives B and D would have the greatest impacts on livestock grazing.

Under Alternative B, 20 percent (1,276,227 acres) of available grazing acres would be designated as open to OHV use (Table 4-49, OHV Designations within Grazing Allotments). Under Alternative B, 74 percent of available grazing areas would be changed from open to limited or closed. Changing motorized vehicle use areas from an open to a limited or closed designation would affect livestock grazing by reducing multiple uses on grazing allotments, thus reducing conflicts from such multiple uses (such as displacement and harassment of livestock). Changing motorized vehicle use areas from an open to a limited OHV use, however, could impact permittees that use OHVs to herd cattle. Changing motorized vehicle use areas from an open or limited designation to a closed designation could impact permittees that use OHVs to herd and check on cattle. Action B-R 10.3, does, however allow for exceptions on OHV use during emergencies and ranching-related maintenance on a case-by-case basis, which could lessen the impacts from changing OHV designations from open to limited or closed.

Individual Effects under Alternative C

Option 1

Approximately 3 percent (250,572 acres) of the 8,038,084 acres of available grazing areas would be located in SRMAs, a three percent increase from Alternative A. Impacts on livestock grazing are greater than under Alternative A but less than under Alternatives B and D.

Under Alternative C, Option 1, no available grazing areas would be designated as open to OHV use (Table 4-49, OHV Designations within Grazing Allotments). Under Alternative C, Option 1, 90 percent of available grazing areas would be changed from open to limited or closed. Changing motorized vehicle use areas from an open to a limited or closed designation would affect livestock grazing by reducing multiple uses on grazing allotments, thus reducing conflicts from multiple uses such as displacement and harassment of livestock. Action C-R 10.3 would impact livestock grazing the same as identified under Alternative B. Alternative C (Option 1) would have the fewest impacts on livestock grazing from OHV use.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from recreation management.

Individual Effects under Alternative D

Approximately 16 percent (1,267,395 acres) of the 7,903,856 acres of available grazing areas would be located in SRMAs, a 16 percent increase from Alternative A. The impacts on livestock grazing are the same as Alternative B.

Under Alternative D, four percent (273,793 acres) of available grazing areas would be designated as open to OHV use (Table 4-49, OHV Designations within Grazing Allotments) and 95 percent would be limited to OHV use. Action D-R 10.3 would impact livestock grazing in a manner similar to that identified under Alternative B. Impacts on livestock grazing would be less than under Alternative A.

Effects from Renewable Energy Management

Effects Common to Alternatives A, B, C (Option 1), and D

Renewable energy development affects areas of grazing in the short term during construction of access roads and facilities (such as wind turbines, solar panels, and biomass plants). Impacts include temporary loss of forage, reduced forage palatability because of dust on vegetation, and temporary harassment and displacement of livestock. In the long term, a smaller amount of permanent grazing acreage would be lost, depending on the size of these operations.

Individual Effects under Alternative A

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

No exclusion zones would be designated under Alternative B, allowing for the greatest amount of renewable energy development and the greatest amount of impacts (as identified above under Effects Common to All Alternatives) to livestock grazing.

Individual Effects under Alternative C

Option 1

The greatest amount of acreage would be excluded from ROW development under Alternative C, Option 1, which would present the least amount of renewable energy development and impacts (as identified above under Effects Common to All Alternatives) to livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from renewable energy management.

Individual Effects under Alternative D

Limiting exclusion zones to 674,161 acres within the WDO would impact livestock grazing less than Alternative B, but slightly more than Alternative C, Option 1.

Effects from Transportation and Travel Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general transportation routes provide better access for permittees and allow for expedited checking and moving of livestock. The cattle also use transportation routes to move from pasture to pasture. Short-term impacts of road construction and temporary road closures include loss of forage, temporary harassment displacement of livestock, and preventing permittees from accessing their cattle in a timely fashion. Long-term direct and indirect impacts on cattle from newly developed transportation routes include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment cause by increased levels of human activities.

Individual Effects under Alternative A

Decommissioning roads from the system inventory could directly impact permittees' access to their livestock.

Individual Effects under Alternative B

Impacts are the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Decommissioning roads from the system inventory could directly impact permittees access to their livestock. This effect could be amplified in areas closed to OHV use.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from transportation and travel management.

Individual Effects under Alternative D

Decommissioning roads from the system inventory would directly and indirectly impact livestock grazing the same as identified under Alternative C, Option 1.

Effects from Lands and Realty Management

Table 4-50 displays land tenure actions proposed under all alternatives within available grazing allotments.

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term impacts from site-specific lands and realty actions, such as construction of power lines, pipelines, and other construction activities within ROWs, include the temporary removal of forage and displacement of livestock. Long-term impacts on livestock from site-specific lands and realty actions include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment from increased levels of human activities.

Table 4-50
Land Tenure within Grazing Allotments

Realty Action	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Retention Areas	5,135,658	6,298,689	6,997,859	0	6,923,708
Disposal Areas (% of allotments Available for disposal)	2,663,082 (32%)	1,934,038 (23 %)	1,040,225 (13 %)	0	1,093,046 (14%)

Source: BLM 2007a

Permanent losses of forage and range improvement projects (RIPs) would occur as a result of land disposals or exchanges. BLM would be required to notify the permittee 2 years prior to any land disposal (43 CFR 4110.4-2 (b)), except in an emergency situation, and to compensate the permittees for the range improvement projects constructed under a cooperative agreement in accordance with 43 CFR 4120.3-6 (c).

Loss of AUMs could occur where large blocks of land are either disposed to the public or the land exchange is not in the same area as the allotment losing the land.

Any land that is acquired could only be grazed prescriptively until such time as an implementation plan is implemented, which could increase permittee flexibility. If grazing is determined to be a suitable use for the acquired land, AUMs could be added to the permit, thereby increasing the amount of forage available for harvest.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Individual Effects under Alternative A

Table 4-50 displays land tenure actions proposed under all alternatives within available grazing allotments. Approximately 32 percent (2,663,082 acres) of available grazing allotments would be available for disposal or exchange under Alternative A. Impacts on livestock grazing are the same as under Effects Common to All Alternatives, above. The greatest acreage available for disposal is identified under Alternative A, presenting the greatest impact on livestock grazing.

Individual Effects under Alternative B

Approximately 23 percent (1,934,038 acres) of available grazing allotments would be available for disposal or exchange (Table 4-50, Land Tenure within Grazing Allotments) under Alternative B. Impacts would be less than under Alternative A but greater than Alternatives C, Option 1 or D.

No exclusion zones would be designated under Alternative B, allowing for the greatest amount of ROW development and the greatest amount of impacts (as identified above under Effects Common to Alternatives A, B, C [Option 1], and D) on livestock grazing.

Individual Effects under Alternative C

Option 1

Approximately 13 percent (1,040,225 acres) of available grazing allotments would be available for disposal or exchange (Table 4-50, Land Tenure within Grazing Allotments) under Alternative C, Option 1. Impacts from disposal actions would be less than under Alternatives A or B and the same as under Alternative D.

Transferring the land identified in Action C-LR 3.2. to the BIA would reduce the amount of public lands within the Fort McDermitt grazing allotment; however, the permit is controlled by the Fort McDermitt Grazing Association, and it is assumed that the loss of these lands would not have a large impact as they could continue to graze on BIA land.

The greatest amount of acreage would be excluded from ROW development under Alternative C, Option 1, which would present the least amount of impacts (as identified above under Effects Common to Alternatives A, B, C [Option 1], and D) on livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from lands and realty management.

Individual Effects under Alternative D

Approximately 13 percent (1,093,046 acres) of available grazing allotments would be available for disposal or exchange (Table 4-50, Land Tenure within Grazing Allotments). Impacts from land disposals would be less than under Alternatives A or B and the same as under Alternative C, Option 1. Transferring the land identified in Action D-LR 3.2. to the BIA would impact livestock grazing the same as identified under Alternative C, Option 1.

Limiting exclusion zones to 635, 891 acres within the WDO would impact livestock grazing less than under Alternative B but slightly more than under Alternative C, Option 1.

Effects from ACEC/RNA Management

Effects Common to Alternatives A, B, C (Option 1), and D

Grazing will continue to be allowed within the Osgood Mountain ACEC under all alternatives. No impacts are anticipated.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to All Alternatives.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to All Alternatives.

Individual Effects under Alternative C

Option 1

Three new ACECs would fall within nine grazing allotments (87,425 acres) under Alternative C, Option 1. If monitoring were to show that a use such as livestock grazing was not compatible with the ACEC objectives, then livestock grazing could directly be impacted by dictating where range improvements could be constructed.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from ACEC/RNA Management.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Backcountry Byways Management

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term direct and indirect impacts of developing new backcountry byways could include loss of forage and temporary displacement of livestock. Long-term impacts on cattle from newly developed backcountry byway routes include loss of forage and reduced forage palatability because of dust on vegetation. However, livestock and livestock operators could use backcountry byways as access routes within or between allotments. The greatest impact on livestock grazing would be increased disturbance and harassment caused by increased levels of visitor use of the routes.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from backcountry byways management.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from National Trails Management

Effects Common to Alternatives A, B, C (Option 1), and D

Effects are the same as those described under Effects from Cultural Resources Management, above.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from National Trails Management.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Wild and Scenic Rivers Management

Effects Common to Alternatives A, B, C (Option 1), and D

There are no impacts on livestock grazing common to all alternatives.

Individual Effects under Alternative A

No impacts are identified from wild and scenic rivers management on livestock grazing under Alternative A.

Individual Effects under Alternative B

No impacts are identified from wild and scenic rivers management on livestock grazing under Alternative B.

Individual Effects under Alternative C

Option 1

Under Alternative C, Option 1, segments of the North Fork of the Little Humboldt River, Washburn Creek, and Crowley Creek would be carried forward as eligible under the Wild and Scenic River Act. The North Fork of the Little Humboldt River flows through the Little Owyhee and William Stock Allotments. Washburn Creek flows through the Jordan Meadows and Washburn Allotments, and Crowley Creek flows through the Jordan Meadows and Crowley Creek Allotments. Livestock operators in these segments have already been tasked with maintaining fences adjacent to the water to protect the system; however, new range improvements may be necessary to protect Outstandingly Remarkable Values (ORVs) within eligible segments.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from wild and scenic rivers management.

Individual Effects under Alternative D

No impacts are identified from wild and scenic rivers management on livestock grazing under Alternative D.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to Alternatives A, B, C (Option 1), and D

Managing Wilderness Areas and WSAs would result in direct and indirect effects on livestock grazing. In general, the protections afforded to these areas, such as restrictions on surface-disturbing and other disruptive activities, would reduce harassment of grazing animals and help maintain and improve vegetation conditions, thereby maintaining or improving the forage base for livestock. Protections afforded to these areas, however, limit the types of access by permittees (such as no OHV use and road closures). In addition, more restrictions are placed on maintaining existing range improvement projects, and new range improvement projects are limited to those that would enhance the wilderness values.

There are 824,950 acres of grazing allotments within the NCA Wilderness Areas. There are 412,710 acres of grazing allotments within WSAs for all alternatives.

Individual Effects under Alternative A

Impacts from wilderness and wilderness study area management on livestock grazing are the same as those identified under Effects Common to Alternatives A, B, C (Option 1), and D.

Specific management measures are not identified for any areas containing wilderness characteristics under Alternative A, so there would not be any impacts on livestock grazing.

Individual Effects under Alternative B

Impacts from wilderness and wilderness study area management are the same as those identified under Alternative A.

Individual Effects under Alternative C

Option 1

Impacts on livestock grazing from Wilderness and Wilderness Study Area management actions are the same as those identified under Effects Common to Alternatives A, B, C (Option 1), and D.

Implementing specific protection measures to the six areas identified as containing wilderness characteristics would result in direct and indirect effects on livestock grazing. In general, the exclusions on mining and ROW development would help maintain and improve vegetation conditions, thereby maintaining or improving the forage base for livestock. However, protections afforded to these areas may place restrictions on maintaining or developing new range improvement projects, placing an extra burden on the permittees in these specific allotments. There are nine grazing allotments that fall within the six areas identified as having wilderness characteristics. The

acreage of each grazing allotment that would be affected by the special management allotted each wilderness characteristic area is as follows:

- Blue Wing-Seven Troughs Allotment-71,338 acres (17%);
- Buffalo Hills Allotment-58,150 (13%);
- Goldbanks Allotment-3304 acres (14%);
- Jersey Valley Allotment-497 acres (2%);
- Leadville Allotment-7942 acres (15%);
- Pleasant Valley Allotment-21,332 (19%);
- Pumpernickel Allotment-3062 acres (8%);
- Rawhide Allotment-7165 acres (14%); and
- South Rochester Allotment-5376 acres (10%).

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from wilderness, wilderness study, and wilderness characteristic area management.

Individual Effects under Alternative D

The impacts on livestock grazing from Wilderness and Wilderness Study Area management actions are the same as those identified under Effects Common to Alternatives A, B, C (Option 1), and D.

Wilderness Characteristic management actions would impact livestock grazing similarly to those identified under Alternative C, but less acreage would be excluded from mining and ROW development as proposed under other resource management actions.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, watchable wildlife viewing (WWV) sites would not impact livestock grazing practices. Establishing new WWVs could bring more people to areas where livestock grazing occurs, which could indirectly increase harassment of livestock and degradation of livestock forage through trampling.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts would be slightly less than under Effects Common to Alternatives A, B, C (Option 1), and D because Action C-WWV 1.1. would manage the area by trying to avoid increasing traffic to remote areas.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from watchable wildlife viewing sites management.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Public Health and Safety Management

Effects Common to Alternatives A, B, C (Option 1) and D

Cleaning up newly discovered dump sites could temporarily impact livestock grazing by fencing off part of an allotment during cleanup and restoration of that site. Actions to correct and clean up hazards and to protect closed sites would also help protect livestock from possible injury or contamination and would improve the vegetative conditions in the long term within those sites.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative C

Option 1

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from public health and safety management.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects from Sustainable Development Management

Effects Common Alternatives A, B, C (Option 1) and D.

There would be no common effects on livestock grazing under Alternatives A, B, C (Option 1), and D.

Individual Effects under Alternative A

Sustainable development is not addressed under Alternative A; therefore, no impacts are anticipated to occur.

Individual Effects under Alternative B

Permanent losses of forage and range improvement projects (RIPs) could occur as a result of land disposals or exchanges. BLM would be required to notify the permittee two years prior to any land disposal (43 CFR 4110.4-2 (b)), except in an emergency situation, and to compensate the permittees for the range improvement projects constructed under a cooperative agreement in accordance with 43 CFR 4120.3-6 (c).

Loss of AUMs could occur where large blocks of land are either disposed to the public or the land exchange is not in the same area as the allotment losing the land.

Short-term impacts from issuances of right-of-ways include the temporary removal of forage and displacement of livestock. Long-term direct and indirect impacts on livestock from site-specific lands and realty actions include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment from increased levels of human activities.

Individual Effects under Alternative C

Option 1

Impacts on livestock grazing from land disposals and issuances of ROWs are the same as identified under Alternative B.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there are no impacts on livestock grazing from sustainable development management.

Individual Effects under Alternative D

Impacts on livestock grazing from land disposals and issuances of ROWs are the same as identified under Alternative B.

Cumulative Effects

The region of influence used to analyze cumulative impacts on livestock grazing includes actions that occur on or adjacent to all allotments located entirely or partially within the planning area. Past actions that have affected livestock grazing include human-caused surface disturbances (mineral development, recreation, and prescribed burning), wildland fires, and historic grazing practices that

have contributed to current ecological conditions. Present actions affecting livestock grazing are mainly those that reduce available grazing acreage or the level of forage production in those areas. Key examples include wildland fires, drought conditions, land disposals, OHV use, habitat restoration, and special designations that restrict grazing. Future actions affecting livestock grazing would be similar to present actions, including any restriction associated with future species listings under the ESA.

The cumulative impacts under each of the alternatives on livestock grazing would be very similar and would parallel the impacts of the alternatives in the general impact analysis. In general, every alternative would reduce forage for livestock in the short term during treatment activities, other surface-disturbing and disruptive activities, human disturbance, and the presence of grazing wildlife. Forage would increase over the long term, however, as treated vegetation communities reach potential productivity.

Cumulative projects that increase human disturbance in grazing areas could also indirectly impact grazing by increasing weeds and invasive species. As stated above, weed invasion can reduce preferred livestock forage and increase the chance of weeds being dispersed by roaming cattle. Cumulatively this indirect impact would be greater than all of the alternatives proposed. Cumulative projects that increase human disturbance in grazing areas could also directly impact grazing by displacing, injuring, or killing animals. Changes to VRM would cumulatively indirectly impact livestock grazing by dictating what type of range improvements are allowed in varying visual resource class areas.

Cumulative impacts from each resource would be greater on livestock grazing if the cumulative projects were to occur simultaneously; however, standard mitigation identified in the Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health would be implemented across all alternatives and any other cumulative projects, thereby reducing or minimizing cumulative impacts on BLM lands.

4.3.2 Minerals—Leasable, Locatable, and Salable

Summary

Mineral resources include fluid and solid minerals leased for development under the Mineral Leasing Act of 1920 and amendments, as well as the Geothermal Steam Act of 1970, locatable minerals that may be claimed and patented under the 1872 Mining Law, and common variety materials that may be purchased under the Mineral Materials Sales Act of 1947.

Development of the various alternatives involved the identification of BLM-administered land that is open or closed to salable, leasable, and locatable mineral activities. On BLM land open to leasing or mining, certain areas may be subject to surface use stipulations in addition to those required by regulation or policy or identified on the standard lease or permit form. These additional restrictions could include NSO and restrictions based on season or other location-specific environmental factors. In many instances, more than one stipulation may apply on the same parcel of land. Table 4-51 indicates the difference among the alternatives in terms of the level of mineral resource availability and surface use restrictions on subsequent operations.

Table 4-51
Summary of Effects on Minerals—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Mineral Materials (Salables)				
Acres closed to mineral material sale or permit	**418,938**	**418,938**	**837,049**	**743,301**
Total Acres open to mineral material sale of some type	**6,786,059**	**6,786,059**	**6,367,789**	**6,461,201**
Acres open to sale/permit[1]	6,786,059	4,473,691	2,746,668	3,487,709
Acres open to sale/permit[1] with known seasonal or other restrictions	0	1,445,244	0	1,202,535
Acres open to permitted government agencies only	0	867,124	3,621,121	1,770,957
Leasable Minerals (Fluid)				
Acres closed to leasing	**446,887**	**1,132,594**	**4,455,028**	**1,198,464**
Acres open to leasing of any type	**6,745,878**	**6,068,969**	**2,749,810**	**5,994,301**
Acres open to leasing[2]	6,716,296	4,472,814	2,749,810	4,008,025
Acres open to leasing[2] plus known seasonal or other restrictions	0	1,374,731	0	1,659,533
Acres open to leasing[2] with No Surface Occupancy	29,582	221,724	0	326,743
Leasable Minerals (Solid)				
Acres closed to leasing	**416,652**	**1,124,266**	**4,455,645**	**1,198,694**
Acres open to leasing of any type	**6,776,198**	**6,068,498**	**2,749,195**	**5,994,123**
Acres open to leasing[2]	6,776,198	4,472,950	2,749,195	4,007,923
Acres open to leasing[2] plus known seasonal or other restriction	0	1,373,904	0	1,659,404
Acres open to leasing[2] with No Surface Occupancy	0	221,644	0	326,769
Locatable Minerals				
Acres closed to claim location	**6,543**	**6,543**	**281,892**	**27,941**
Acres open to claim location	**7,198,294**	**7,198,294**	**6,922,945**	**7,176,896**
Acres open to operations[1]	2,898,405	2,898,405	3,415,323	4,148,888
Acres open to operations but having known conflicts[3]	4,299,889	4,299,889	3,507,622	3,028,008

[1]Open with standard operation terms and stipulations.

[2]Open with standard lease terms and stipulations.

[3]Operations may be authorized, but one or more known conflicts may require special conditions or mitigating measures.

Almost all of the management decisions and actions under each alternative are aimed at protecting other resources. In general, these decisions and actions result in varying amounts of land available for each of type of mineral resource category detailed below. They also result in varying types and levels of mitigation required for protection of sensitive environmental resources. The costs associated with reclamation and other mitigations could affect whether individuals or organizations continue mineral exploration and development activities. Other goals and actions involve frequency and types of audits and inspection of activities related to mineral development to ensure permit compliance and fair compensation for the minerals extracted.

Salable Minerals: The alternatives would affect salable mineral disposals by various limits on the amount of land available for disposal sites and the areas open with restrictions, as well as limits on operations. The value of most salable minerals is closely tied to the proximity of the source to the final place of use. Closing lands to sale of material would result in loss of revenue to the Treasury from the minerals contained there. It may also raise the cost to developers because they would have to rely on resources from private lands or from public lands at a greater distance, either of which may be more expensive. Closing land to all forms of disposal would also impair the ability of various levels of government to use nearby materials at no cost for the benefit of public projects. The most common of such projects are the creation or maintenance of rural roads.

Leasable Minerals: While solid leasable minerals are present within the planning area, no significant production of these minerals is underway or anticipated. Fluid leasable minerals (i.e., geothermal resources, oil, and gas) are or may be found in commercially exploitable deposits in the WDO.

The impact issues for fluid minerals result from management decisions for the protection of other resources. Constraints related to the fluid mineral leasing include exclusion areas, buffer zones around sensitive areas, seasonal constraints, and permit stipulations. The alternatives would affect fluid mineral development by varying the amounts of land available for leasing and the lease terms and stipulations to be applied on any given tract of land. Closing lands to development would result in reduced domestic production of the US mineral needs and higher dependence on foreign sources of those minerals, reduced economic development on the regional and local levels, loss of royalty revenues from the lands' minerals, and loss of tax revenue to all levels of government.

Locatable Minerals: The alternatives would affect locatable mineral exploration and development by varying the amount of land

- open to the operation of the mining laws
- open with identified resource conflicts resulting in restrictions on proposed operations, or
- open with no previously known resource conflicts, for each alternative.

The restrictions are not applied to mining claims themselves but to operational proposals (a notice or plan of operations) submitted for exploration or development of locatable minerals. Closing lands to claim and subsequent development would reduce domestic production of our mineral needs and higher dependence on foreign sources of those minerals, reduced economic development on the regional and local levels, and loss of tax revenues to all levels of government that would have resulted from the development of the encompassed minerals.

Methods of Analysis

Methods and Assumptions

The analysis of potential impacts is based on a review of literature, geologic maps, and information provided by experts in the BLM and other agencies. Analyses on mineral resources are also based on the expertise of BLM resource specialists at the WDO. Effects are quantified, where possible. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate.

General assumptions regarding all of the mining activities detailed below include the following:

- There would be no major regulatory changes in federal or state statutes, regulations, policy, or guidance that govern the exploration and development of minerals.
- Surface-disturbing and other disruptive activities at authorized mining and drilling locations could continue, resulting in wildlife disturbance, degradation of visual quality, recreation values, soil erosion, loss of livestock and wildlife forage, and loss of wildlife cover.

Leasable Minerals

An RFD scenario for oil and gas was developed in conformance with BLM Instruction Memorandum No. 2004-089 (see Appendix I). The RFD scenario was developed based on past exploration activities and reasonable estimates for future exploration and development given the following assumptions:

- The general geographic areas where oil and gas exploration is predicted to occur are with in the Neogene Basin or Neogene Source Rock Play area;
- An estimated twelve wildcat wells (wells drilled in areas with no previous production) may be drilled in these Neogene Basins in the next 15 to 20 years. Many of the initial twelve wells would likely be located in the Buena Vista Valley and Kyle Springs areas;
- Construction of temporary road access and a drilling location for each wildcat well may disturb about 17 acres for the road and 4 acres for the well pad for each wildcat well, or a total of 250 acres for all the wildcat wells;
- Of these, an estimated 10 wells will be dry holes (no economically producible oil or gas is discovered). Dry holes will be plugged and abandoned, with surface reclamation occurring shortly afterward. Reclaimed acres (regraded and seeded) are assumed to be stabilized after two years. The maximum area disturbed at any one time would be approximately 42 acres;
- Two of the wells drilled are estimated to produce a discovery. Each of the discovery wells will probably prompt additional two step-out wells. These would be drilled near each proven well to establish the limits and continuity of the oil or gas reservoir and to assist with production. An estimated four step-out wells will be drilled, two for each discovery;
- Each step-out well will disturb up to four acres for the well pad and may disturb only seven acres for the access road by using the road constructed for the associated wildcat well. Total disturbance for the four step-out wells is 44 acres;

- One of the discoveries (including the two step-out wells) is estimated to have limited oil production and to occur on BLM-administered lands; and
- Geophysical exploration operations would comply with the terms and conditions for notice of intent to conduct geophysical exploration provided on BLM Form 3150-4a. Notices of intent submitted for the conduct of geophysical surveys would be evaluated on a case-by-case basis.

An RFD scenario for geothermal resources was developed in the Geothermal Resources Leasing Programmatic EA (BLM 2002a) in order to provide a reasonable estimate of anticipated exploration, development, and production activity that might be expected over the next 20 years of developing geothermal resources of the planning area. The RFD scenarios considered the location of KGRAs, historical leasing patterns and geologic models to identify favorable and prospective areas for developing geothermal energy within the planning area.

- Thirteen PVAs were identified that encompass approximately 1.9 million acres. These PVAs include the six KGRAs and areas with pending lease applications (typically in the vicinity of the KGRAs);
- Exploration drilling would occur on all geothermal leases over the next 20 years. During this period, up to 40 geothermal leases may be explored;
- Three temperature gradient or exploration flow test wells may be drilled on each lease, for a total of 120 exploration holes or six holes drilled per year;
- Each exploration drilling may disturb up to an acre. Each access road may disturb up to 0.5 acre. Exploration of each lease with three exploration wells may disturb up to 4.5 acres;
- Exploration drilling surface impacts are transitory and are usually abandoned and reclaimed within two years. Assuming there would not be more than 12 drill pads disturbed at any one time, the total active disturbance would be nine acres;
- If successful, exploration programs lead to more detailed exploration drilling, and a few of which lead to the discovery of geothermal resources capable of developing up to five 15 megawatt geothermal power plants;
- A typical geothermal power plant was used as the benchmark to estimate the amount of disturbance that could be involved for the RFD scenario. These calculations are meant to be used as an indicator of the impacts involved, not as a cap or bound on the size of any geothermal power plant development.. For assessment purposes, the assumption was that each power plant would disturb up to 121 acres, with the following characteristics:
  - Up to six production or injection wells could be drilled on each lease, with each well pad disturbing approximately five acres (30 acres total),
  - A mainline road, disturbing approximately 10 acres, and three access roads, each disturbing approximately seven acres (31 acres total),
  - Three pipelines disturbing approximately five acres each (15 acres total), and
  - A power plant would occupy approximately 30 acres, a disposal pond would disturb approximately five acres, and a 25-mile transmission line would disturb approximately 10 acres; and

- The total area of disturbance for five typical power plants would be 605 acres. Not all of the power plants would be constructed at the same time, and construction of each plant would likely be staged in five-megawatt increments. Therefore the degree of surface disturbance at any given time is less than 1,000 acres. In addition, mitigation and enhancement would have occurred in some portions of the lease before additional portions of the lease are developed.

Locatable Minerals

- Based on projections, permitting demands for both hard rock exploration and mining would likely increase over time. Exploration in large part would take place in areas near known mineral deposits and within historic districts; however, some exploration would also be conducted in other outlying areas.
- Currently there are ten large open pit gold and silver mines, and six other industrial mineral mines in operation in the planning area. Within the next 10 years, two to three currently active mines are expected to be closed and reclaimed. These mine closures would likely be offset with both new projects being developed and placed into production and the expansion of existing mines.
- There are no large-scale commercial placer operations operating in the planning area. "Nugget shooting"—searching for placer gold with hand-carried metal detectors—is a common activity in several areas. This activity and other small-scale placer mines typically operate under "casual use" criteria and use little other than hand tools and gold spirals or similar small-volume concentrating devices. Occasionally operators at this scale desire to use mechanized equipment to clear vegetation from small areas, and these are authorized by a notice under the provision for testing up to 1,000 tons of presumed ore. The planning area would likely anticipate 10 operations under this sort of notice during any given year. Moderate scale operations are authorized under a plan of operations and are permitted to use mechanized equipment for mining and processing in excess of 1,000 tons of ore. The planning area should anticipate one such proposal approximately every five years, or four such operations over the life of the plan.
- Gems and semiprecious stones mining in the planning area are small, usually operating under casual use criteria. Some moderate-sized operations rely on mechanized earthmoving to remove overburden, typically followed by hand picking the desired materials. These deposits will likely continue to be extended but will remain small, with labor-intensive mining methods.
- Low to moderate potential exists for production of most locatable industrial minerals, but the potential is good for production of carbonate (limestone and dolomite), diatomate, and gypsum where deposits are located near transportation corridors and are can be mined by inexpensive open-cut methods. The development of the proposed Echo Canyon Limestone Mine, northeast of Lovelock and east of the Humboldt River and Interstate 80, is presently being considered by the owner of the claims. Exploration for other cement-grade limestone deposits continues in the same area.
- Potential for copper production is also low, with the exception of moderate to good potential for further development of at least one massive sulfide copper deposit at the Big Mike Mine within the planning area.

- While there is small current production and little significant historic production of molybdenum in the planning area, the Ashdown Property was brought into production in 2007. Operations at this property may expand, based on ongoing exploration, and other molybdenum deposits also may be developed over the next 15 to 20 years.
- There is a moderate potential for the development of tungsten deposits due to recent significant price increases. Some of the larger, higher grade deposits in the planning area may be brought into production. Plans are in their early stages for reopening the moth-balled Springer Mine, which is on private land within the planning area.

Salable Minerals

- The planning area has an active mineral materials sales and disposal program. The primary commodity sold to the public is sand and gravel, with a minor amount of decorative and building stone, clay, and decomposed granite. Substantial amounts of material are also provided free of charge to governments and nonprofit entities for public purposes, primarily road construction and maintenance. The mineral materials program administers 65 active sales, 112 free-use permits, and 168 mineral site rights-of-way.
- Salable mineral extraction and use will increase, along with mining activity, commercial development, recreation activities, and private property development. Salable mineral sites with a priority for use will likely include sand, gravel, and rock quarries along state-, county-, and BLM-managed roads, especially along the Interstate 80 corridor.
- There is good potential for new and continued development of clay deposits in the planning area.
- There is moderate potential for development of building and ornamental stone deposits, including columnar basalt and flat slabby volcanic rock. Mines and quarries in the planning area include Trinity Range and Black Mountain in Churchill County and Virgin Valley (Wegman Quarry) in Humboldt County.
- The demand for boulders for landscaping is likely to grow. Most of these operations are very small scale and remove a small number of boulders.
- There is low potential for development of pumice and cinder deposits.

Effects from Air Quality Management

Effects Common to All Alternatives

There are no effects common to all alternatives from air quality management.

Individual Effects under Alternative A

This alternative only addresses dust abatement and mitigation measures required for road maintenance associated with mining activities. Dust control for all mining activities is addressed in Alternatives B, C, and D. The road maintenance dust control measures would be continuous for the duration of mining. There would be minor increases to the cost of mining.

Individual Effects under Alternative B

This alternative would require the air quality impacts from all BLM and BLM authorized activities to be minimized or reduced as determined on a case-by-case basis. Surface mining activities would require substantial efforts and costs to comply with these dust control requirements. The operational cost increases associated with dust control required for mineral exploration and development road building and maintenance would be manageable. The impacts of this alternative are equivalent under Alternatives C and D.

Individual Effects under Alternative C

Alternative C would require the air quality impacts from all BLM and BLM authorized activities to be minimized or reduced as determined on a case-by-case basis. Surface mining activities would require substantial efforts and costs to comply with these dust control requirements. The operational cost increases associated with dust control required for mineral exploration and development road building and maintenance would be manageable. The impacts of Alternative C are equivalent to those under Alternatives B and D.

Individual Effects under Alternative D

This alternative would require the air quality impacts from all BLM and BLM authorized activities to be minimized or reduced as determined on a case-by-case basis. Surface mining activities would require substantial efforts and costs to comply with these dust control requirements. The operational cost increases associated with dust control required for mineral exploration and development road building and maintenance would be manageable. The impacts of this alternative are equivalent under Alternatives B and C.

Effects from Geology Management

Effects Common to All Alternatives

There are no effects common to all alternatives from geologic resource management.

Individual Effects under Alternative A

The protection of unique geologic resources is not addressed in the current management plan. Avoidance of impacts on unique geologic resources and mitigation measures are addressed on a case by case basis. Since there is no overall plan for protection of these resources under this alternative, there is more land open for mining. This alternative has the fewest operational limits and costs associated with protecting unique geologic resources.

Individual Effects under Alternative B

While areas with unique geologic resources would remain open for all methods of mineral disposal as in Alternative A, under this alternative the actions would be subject to the minimum mitigation measures sufficient to protect the values at risk, including through avoidance, reclamation, and other applicable use restrictions.

Areas with unique geologic resources include Lake Lahontan tufa mounds and shore features (e.g., gravel bars or shore terraces), Humboldt Range Natural Arch, Columnar Basalt near Lava Beds,

McFarlan Hot Spring, the 1915 earthquake fault trace, Disaster Peak, Trego Mountain, and Pulpit Rock.

The amount of land open for all methods of mineral disposal would greater under this alternative than under Alternatives C and D. This alternative has more operational limits and higher costs associated with protecting unique geologic resources than Alternative A but fewer operational limits and costs than under Alternatives C and D.

Individual Effects under Alternative C

Areas with unique geologic resources would be designated as exclusion zones for ROWs and other discretionary actions and the areas closed to salable mineral disposal. The areas would not be available to leasable minerals exploration and development even with an NSO stipulation. Proposed nondiscretionary activities that may affect geologic features would be authorized with appropriate mitigation measures to protect the values at risk. The withdrawal of these areas from the General Mining Law would be pursued.

Areas with unique geologic resources include Lake Lahontan tufa mounds and shore features (e.g., gravel bars or shore terraces), Humboldt Range Natural Arch, Columnar Basalt near Lava Beds, McFarlan Hot Spring, the 1915 earthquake fault trace, Disaster Peak, Trego Mountain, and Pulpit Rock.

Alternative C would result in the least amount of area available for all methods of mineral disposal and the greatest protection of geologic resources.

Individual Effects under Alternative D

Areas with unique geologic resources would be designated as exclusion zones for ROWs and other discretionary actions and the areas closed to salable mineral disposal. The areas would be available to leasable minerals exploration and development with an NSO stipulation. Proposed activities that may impact geologic features would be authorized with mitigation measures determined to be appropriate to protect the values at risk. The withdrawal of these areas from the General Mining Law would be pursued.

Areas with unique geologic resources include Lake Lahontan tufa mounds and shore features (e.g., gravel bars or shore terraces), Humboldt Range Natural Arch, Columnar Basalt near Lava Beds, McFarlan Hot Spring, the 1915 earthquake fault trace, Disaster Peak, Trego Mountain, and Pulpit Rock.

The amount of land open for all methods of mineral disposal would be greater under this alternative than under Alternative C but less than under Alternatives A and B. This alternative has more operational limits and higher costs associated with protecting unique geologic resources than under Alternatives A and B, but fewer limits and lower costs than under Alternative C.

Effects from Soil Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from soil resource management.

Individual Effects under Alternative A

Mine operators would be encouraged to minimize disturbance to biological soil crusts, to reduce soil erosion by using BMPs, and adopt erosion control techniques, such as seeding and placing straw bales or matting, on a case-by-case basis. The BLM would pursue land reclamation in disturbed areas also on a case-by-case basis. These requirements would not reduce the amount of land available for mining activities but would increase operational limits and increase operational costs. This alternative is equivalent to Alternative B in that it would not restrict the amount of land open for mining activities. It is more restrictive than Alternative B in that some of the case-by-case mitigations and reclamations are slightly more protective of soils than under Alternative B.

Individual Effects under Alternative B

Mine operators would be encouraged to minimize disturbance to biological soil crusts, reduce soil erosion by using BMPs and erosion control techniques, such as seeding and placing straw bales or matting. Multiple uses would be allowed with mitigations without seasonal closures. The BLM would pursue land reclamation in disturbed areas. Surface-disturbing activities would be required to salvage the best available material for use as growth medium for reclamation. This alternative is equivalent to Alternative A in not restricting the amount of land open for mining and requires fewer mitigations and reclamations than under Alternative A's often more stringent case-by-case basis. Alternative B includes fewer operational limits and costs to protect soils than Alternatives C and D.

Individual Effects under Alternative C

Mine operators would be encouraged to maintain, protect, or reduce adverse impacts on soils and to eliminate or fully mitigate surface disturbances to biological soil crusts when soil surfaces are dry. Surface disturbances within high potential biological crust areas would be seasonally eliminated. The BLM would require reclamation of all surface-disturbing activities and would require salvage or import growth medium for reclamation. Alternative C is more restrictive than Alternatives A and B in seasonally restricting the amount of land open for mining activities. They are the alternatives that are most protective of soils with the greatest operational limits and costs.

Individual Effects under Alternative D

Mine operators would be encouraged to maintain, protect, or reduce adverse impacts on soils. Surface disturbances within high potential biological crust areas would be seasonally restricted on a case-by-case basis. Where appropriate, the BLM would manage surface-disturbing activities to ensure reclamation. These activities would be required to salvage the best available material for use as growth medium for reclamation. This alternative is slightly less restrictive than Alternative C in the amount of land seasonally restricted from mining activities would be determined on a case-by-case basis. It is more protective of soils than Alternatives A and B with, greater operational limits and operational costs, and less protective than Alternative C.

Effects from Water Resources Management

Effects Common to All Alternatives

Mineral activities could be limited under all alternatives to prevent degradation of water quality beyond established standards specified in the Nevada Water Pollution Control Regulations and the

September 2004 memorandum of understanding between the BLM and the State of Nevada. These requirements could reduce the amount of land available for mining activities and could increase operational limits and costs.

Individual Effects under Alternative A

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on water resource management objectives or actions under Alternative A beyond those discussed under Effects Common to All Alternatives above.

Individual Effects under Alternative B

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on water resource management objectives or actions under Alternative B beyond those discussed under Effects Common to All Alternatives above.

Individual Effects under Alternative C

In addition to impacts discussed under Effects Common to All Alternatives above, priority watershed areas would be considered open only to government entities for salable minerals activities and would be closed to leasable minerals activities. While the rights to locatable minerals could be acquired, proposals for locatable mineral operations would include restrictions. The amount of land restricted from these mining activities would be greatest under Alternative C.

Individual Effects under Alternative D

In addition to impacts discussed under Effects Common to All Alternatives above, priority watershed areas would be considered open only to government entities for salable minerals activities and would be open but with NSO for leasable minerals activities. While the rights to locatable minerals could be acquired, locatable mineral operations would include restrictions for those that are incompatible with the priority use. The amount of land restricted from these mining activities would be less than under Alternative C.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on forest/woodlands products management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on weeds management objectives or actions. Under all alternatives, individuals or organizations involved in mineral activities would be responsible for controlling weeds imported or spread. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on chemical and biological control objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

There are no effects common to all alternatives from vegetation-rangeland management.

Individual Effects under Alternative A

There are no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative A.

Individual Effects under Alternative B

There are no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative B. Reclamation requirements and costs would be greater under Alternative B than Alternative A. Under Alternative B, introduced grass communities would be reestablished in mining activity reclamation areas to allow for recovery.

Individual Effects under Alternative C

There are no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative C. Reclamation requirements and costs would be slightly greater under Alternative C than Alternative B. Under Alternative C, native plant species and communities that are similar in structure and composition to the site potential should be established in areas of disturbance associated with mining activities.

Individual Effects under Alternative D

There are no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative D. Reclamation requirements and costs would be the same as under Alternative C, where plant species and communities that are similar in structure and composition to the site potential should be established in areas of disturbance associated with mining activities.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on riparian and wetlands management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There are no effects common to all alternatives from fish and wildlife management.

Individual Effects under Alternative A

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required. Areas where there are nests of migratory birds (including raptors) would continue to be open for acquiring rights to locatable minerals. However, inventories for nesting migratory birds (including raptors) done before the area is disturbed would be required for proposed surface disturbance activities during peak nesting period if active nests were present. Mitigations, including use restrictions and avoidance, would be employed. Seasonal restrictions on mining operations would increase costs. Alternative A is the least restrictive if the alternatives.

Individual Effects under Alternative B

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required. Areas where migratory birds (including raptors) nest would continue to be open for acquiring rights to locatable minerals, but mitigations would be developed to protect migratory birds during the peak breeding season, including the avoidance of active nests.. Seasonal restrictions on mining operations would increase costs.

Priority wildlife habitat areas would be managed as open with stipulations areas and may restrict other uses or apply mitigation measures that would impact the amount of land available for mining activities and increasing operational costs.

Alternative B is more restrictive on areas that are available for mining activities than Alternative A and less restrictive than Alternative C.

Individual Effects under Alternative C

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required. Mechanical surface, vegetative, and human activities would be prohibited during the peak nesting period for migratory birds (including raptors), which is April 1 to July 15, in areas where these birds' nests are located.

Priority wildlife habitat areas would be managed as closed or as open with stipulations areas and may be restricted from other uses, or mitigation measures that would impact mining would be applied.

Alternative C is the most restrictive on areas that are available for mining activities.

Individual Effects under Alternative D

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be

required. A predisturbance inventory for nesting migratory birds (including raptors) would be required when mechanical surface or vegetative disturbance activities are proposed during the peak nesting period, from April 1 to July 15. If nests with eggs or young are located, use restrictions or mitigation measures (e.g., avoidance) would be employed.

Priority wildlife habitat areas would be managed as closed or as open with stipulations areas and may restrict other uses or apply mitigation measures that would impact mining activities.

Alternative D is less restrictive on areas that are available for mining activities than Alternative C and more restrictive than Alternatives A and B.

Effects from Special Status Species Management

Effects Common to All Alternatives

Under all alternatives, surveys for sensitive species in the project area would be required before any leasing or surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required if it were determined that they affect federally listed species or habitat.

Concerning sage-grouse leks, the rights to locatable minerals could be acquired, but proposals for mineral operations would include the following restrictions (with some exceptions, modifications, and waivers authorized by the BLM):

- No use or occupancy within a quarter mile of the perimeter of known sage-grouse leks. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site or the quarter-mile buffer line would be subject to NSO;
- No surface occupancy or human activity within two miles of the perimeter of an active lek, from March 15 to June 1 annually; and
- Limits on placement of any high structures within two miles of the perimeter of an active lek.

Mining authorized by permits or contracts under the solid leasable or salable mineral regulations would not be allowed within 200 yards of bat habitats. Other mining-related activities, such as drilling or blasting, would be discouraged within that zone. Where these mining-related activities cannot avoid bat habitat, mitigation would be required. For leasing mineral activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site or the 200-yard buffer line would be subject to NSO.

The restrictions would result in less land available for mining activities. The mitigations would result in greater operational costs.

Individual Effects under Alternative A

In addition to the conditions discussed under Effects Common to All Alternatives above, areas within sage-grouse PMUs or near documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites would continue to be open for acquiring rights to locatable minerals. However, these areas would have other seasonal restrictions, additional limitations, or stipulations applied to

operations authorizations. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would include restrictions in those areas identified for exclusion of ROWs associated with special status species habitat.

Individual Effects under Alternative B

In addition to the conditions discussed under Effects Common to All Alternatives above, areas within sage-grouse PMUs, or near documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites, would continue to be open for acquiring rights to locatable minerals. However, these areas would have other seasonal restrictions, additional limitations or stipulations applied to operations authorizations. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations and fluid mineral operations would include restrictions in those areas identified for exclusion of ROWs associated with special status species habitat. Salable minerals operations in these areas would be allowed only for government entities for the maintenance of roads or other public facilities. Alternative B is more restrictive than Alternative A and would result in large amounts of salable minerals resources being made available only to government entities. This would result in less availability of resources for other entities and possibly increased hauling and increased prices to consumers.

Individual Effects under Alternative C

Special status species surveys are required for all alternatives for any surface-disturbing activities. In addition to this and other conditions discussed under Effects Common to All Alternatives above, Alternative C also requires specific surveys for pygmy rabbits within potential habitat and for any sensitive plant species that occurs within two miles of the project site.

Areas within 500 yards of documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites would continue to be open for acquiring rights to locatable minerals. However, these areas would have other seasonal restrictions, additional limitations or stipulations applied to operations authorizations. ROWs associated with locatable mineral operations would include restrictions from those areas with identified special status species habitat.

Additionally, Alternative C would not allow leasing within two miles of the perimeter of an active lek or surface occupancy or disturbance within nesting, summer, or winter habitats within PMUs. Also, salable minerals operations would not be allowed, except for government entities for maintaining roads or other public facilities as long as there would be no disturbance within 0.6 mile of an active lek.

While large-scale surface-disturbing discretionary mining would not be allowed within 200 yards of bat habitats under all of the alternatives, Alternative C extends this zone to within 500 yards. Other mining-related activities, such as drilling or blasting, would be discouraged within that zone. Where these mining-related activities cannot avoid bat habitat, mitigation would be required. In addition, no salable mineral material disposal would be allowed in this zone. For leasing mineral activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site or the 500-yard buffer line would be subject to NSO.

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations or leasable minerals operations would include restrictions in those areas identified for avoidance or

exclusion of ROWs associated with special status species and state rare and protected species habitat. Salable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities.

Under Alternative B, less land is restricted to use of salable minerals by government entities than under Alternative C. Otherwise, Alternative C would restrict the most land from being available for mineral activities and would include the most operational restrictions. These conditions would result in greater operational costs.

Individual Effects under Alternative D

In addition to the conditions discussed under Effects Common to All Alternatives above, sensitive species surveys are required for all alternatives for any surface-disturbing activities. Alternative D also requires specific surveys for pygmy rabbits within potential habitat and for any sensitive plant species that occurs within two miles of the project site.

No salable mineral material disposal would be allowed within 200 yards of bat habitats.

Additionally, Alternative D would restrict salable minerals activities and solid minerals leasing within two miles of the perimeter of an active lek and would limit any high structures within two miles of the perimeter of an active lek.

Leasable minerals operations would be restricted in those areas identified for avoidance or exclusion of ROWs associated with special status species habitat. Salable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities.

Under Alternative B, less land is restricted to use of salable minerals by government entities than under Alternative D. Otherwise, Alternative D would restrict the more land from mining activities that Alternatives A and B but less than Alternative C.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

There are no effects common to all alternatives from wild horse and burro management.

Individual Effects under Alternative A

Herd Management Areas (HMAs) would continue to be open for acquiring rights to locatable minerals but operations that could result in adverse impacts on the health and welfare of WHBs may be permitted in HMAs subject to stipulated safeguards (SOPs) and mitigation measures (e.g., seasonal closures, signage, rerouting access). Alternative A is roughly equivalent to Alternatives B and D and less restrictive to mining activities than Alternative C.

Individual Effects under Alternative B

HMAs would continue to be open for acquiring rights to locatable minerals. Salable, leasable, and locatable minerals operations may be permitted in HMAs subject to stipulated safeguards (SOPs) and mitigation measures (e.g., seasonal closures, signage, rerouting access). Alternative B is

equivalent to Alternative D, roughly equivalent to Alternative A, and less restrictive to mining activities than Alternative C.

Individual Effects under Alternative C

HMAs would be closed to leasable minerals operations. The HMAs would continue to be open for acquiring rights to locatable minerals. Salable mineral operations by government entities for maintaining roads or other public facilities, and locatable mineral operations would be authorized if the free-roaming nature of WHBs is maintained. Other salable mining operations would not be allowed. Alternative C is the most restrictive alternative and would limit the amount of land open to minerals activities.

Individual Effects under Alternative D

HMAs would continue to be open for acquiring rights to locatable minerals. Salable, leasable, and locatable minerals operations may be permitted in HMAs subject to stipulated safeguards (SOPs) and mitigation measures (e.g., seasonal closures, signage, reroute access). Alternative D is equivalent to Alternative B, roughly equivalent to Alternative A, and less restrictive to mining activities than Alternative C.

Effects from Wildland Fire Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on wildland fire management objectives or actions. Implementing fuel treatments could protect mine infrastructure from wildfire. Protection of property is a suppression priority under the response to wildfires, based on social, legal, and ecological consequences of the fire. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Under all alternatives, surveys for cultural resources in the project area would be required before any surface disturbance would be authorized. Minerals activities could be restricted or additional mitigations required if it were determined that they affect cultural sites that are listed on the NRHP or that have been determined to be eligible for that listing.

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations within a quarter mile of cultural sites that are listed on the NRHP or that have been determined to be eligible for listing may be restricted or have significant mitigation measures imposed.

Individual Effects under Alternative A

Other than the conditions discussed under Effects Common to All Alternatives above, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on cultural resources management objectives or actions under Alternative A. Alternative A is the least restrictive to mining activities.

Individual Effects under Alternative B

In addition to the conditions discussed under Effects Common to All Alternatives above, the areas within a quarter mile of cultural sites that are listed on the NRHP or that have been determined to be eligible for that listing would be open to fluid and solid minerals leasing with NSO. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site would be subject to NSO. Alternative B is more restrictive of mining activities than Alternative A and less than Alternatives C and D.

Individual Effects under Alternative C

In addition to the conditions discussed under Effects Common to All Alternatives above, the areas within a quarter mile of cultural sites that are listed on the NRHP or that have been determined to be eligible for that listing would be closed to fluid and solid minerals leasing, salable mineral operations. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site would be closed. Alternative C is equivalent to Alternative D and would limit the amount of land available for mining activities.

Individual Effects under Alternative D

In addition to the conditions discussed under Effects Common to All Alternatives above, the areas within a quarter mile of cultural sites that are listed on the NRHP or that have been determined to be eligible for that listing (particularly Lovelock Cave and Dave Canyon) would be closed to fluid and solid minerals leasing, salable mineral operations. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site would be closed. Alternative D is equivalent to Alternative C.

Effects from Tribal Consultation Management

Effects Common to All Alternatives

The rights to locatable minerals could be acquired, but proposals for mineral operations may be restricted within a mile of an identified TCP known to be or considered to be eligible for the NRHP. These limits may be modified based on Native American consultation and could involve larger or smaller areas based on the setting and use of the TCP. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the TCP or the mile buffer line would be subject to NSO.

Individual Effects under Alternative A

In addition to the conditions discussed under Effects Common to All Alternatives above, the rights to locatable minerals could be acquired, but proposals for locatable mineral operations would be restricted or additional mitigation measures required in those areas identified for exclusion of ROWs associated with identified TCPs.

Individual Effects under Alternative B

In addition to the conditions discussed under Effects Common to All Alternatives above, salable minerals authorizations may be modified as to size or NSO stipulations, based on consultation with

Native American tribes on the setting and use of any TCPs. Salable minerals operations by government entities for the maintenance of roads or other public facilities would be allowed within a mile of an identified TCP known to be eligible or considered to be eligible for the NRHP.

Fluid and solid leasable minerals activities would be allowed within one mile of an identified TCP eligible for the NRHP subject to an NSO stipulation. To accomplish this, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the TCP or the one-mile buffer line would be subject to NSO.

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations and fluid minerals operations would include restrictions or additional mitigation measures required in those areas identified for exclusion of ROWs associated with identified TCPs. Salable minerals operations in these areas would only be allowed for government entities for the maintenance of roads or other public facilities.

Consultation with Native American tribes may produce recommendations for larger or smaller areas subject to NSO, based on the setting and use of any TCP.

Individual Effects under Alternative C

In addition to the conditions discussed under Effects Common to All Alternatives above, Lovelock Cave, Dave Canyon, and areas within a mile of an identified TCP known to be eligible or considered to be eligible for the NRHP would be closed to salable minerals and fluid and solid leasable minerals activities, including those of government entities.

Consultation with Native American tribes may produce recommendations for larger or smaller areas subject to closing based on the setting and use of any TCP.

The area of the Lovelock Cave mineral withdrawal would be enlarged to a total of 640 acres.

Individual Effects under Alternative D

In addition to the conditions discussed under Effects Common to All Alternatives above, Lovelock Cave, Dave Canyon, and areas within a mile of an identified TCP known to be eligible or considered to be eligible for the NRHP would be closed to salable minerals activities, including those of government entities.

Lovelock Cave and Dave Canyon would be closed to fluid and solid leasable minerals activities, which would be allowed within one mile of an identified TCP eligible for the NRHP subject to a NSO stipulation. To accomplish this, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the TCP or the one-mile buffer line would be subject to NSO.

Consultation with Native American tribes may produce recommendations for larger or smaller areas subject to closure or NSO stipulations based on the setting and use of any TCP.

The area of the Lovelock Cave mineral withdrawal would be enlarged to a total of 640 acres.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

Under all alternatives, a review of existing data and an inventory of the presence and importance of fossiliferous deposits would be required before any surface-disturbing activity. The George Lund Petrified Forest mineral withdrawal would be maintained as closed to salable and locatable minerals activities.

Individual Effects under Alternative A

Other than to the conditions discussed under Effects Common to All Alternatives above, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on paleontological resources management objectives or actions under Alternative A.

Individual Effects under Alternative B

Other than the conditions discussed under Effects Common to All Alternatives above, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on paleontological resources management objectives or actions under Alternative B.

Individual Effects under Alternative C

In addition to the conditions discussed under Effects Common to All Alternatives above, the area of the George Lund Petrified Forest mineral withdrawal would be enlarged to a total of 141 acres.

Individual Effects under Alternative D

In addition to the conditions discussed under Effects Common to All Alternatives above, salable mineral activities and fluid and solid leasable minerals activities would be allowed within one quarter mile of an identified paleontological resource classified as being of scientific or educational interest. To accomplish this, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site or the quarter-mile buffer line would be subject to NSO.

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would include restrictions within a quarter mile of identified paleontological resources classified as being of scientific or educational interest.

The area of the George Lund Petrified Forest mineral withdrawal would be enlarged to a total of 141 acres.

Effects from Visual Resources Management

Effects Common to All Alternatives

All of the alternatives would require identification and management of areas according to their VRM values. Activities not meeting the VRM objectives may require mitigations, as determined on a case-by case basis. Surface use stipulations under some VRM classes could redesign, cancel, or mitigate mineral activities. In addition, the alternatives require the protection of the visual integrity of the National Historic Trails and their viewsheds.

Other than the conditions discussed, there are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on visual resources management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from cave and karst resource management.

Individual Effects under Alternative A

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative A. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Individual Effects under Alternative B

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative B. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Individual Effects under Alternative C

The rights to locatable minerals could be acquired, but proposals for locatable minerals, salable minerals, and fluid and solid leasable minerals operations would include restrictions within 500 feet of a cave or karst feature. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) intersected by the site or the 500-foot buffer line would be closed. Alternative C would be more restrictive for mining activities than would Alternatives A, B, and D.

Individual Effects under Alternative D

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative D. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on livestock grazing management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Minerals Management

Effects Common to All Alternatives

General

Impacts from mineral exploration are likely to include surface disturbances related to the construction of exploration drill roads and drilling pads. New and existing large-scale mines, mine expansions, and small-scale mining operations are likely to involve access road construction, increased traffic and surface disturbances associated with various mine facilities (for example: portals, pits, waste rock dumps, ore processing, tailing facilities, heap leach pads, administration and maintenance facilities; and stormwater runoff control ponds and diversions structures).

Impacts on mining include increased operational limits and costs associated with reclamation and interim reclamation. All alternatives include provisions for implementing concurrent reclamation at all mineral operations and interim reclamation for all facilities or features that would be unused for more than one year. These provisions will reduce the amount of land disturbed at any one time, as wells as reducing erosion, loss of growth media, and siltation of nearby waterways. In addition, there would be no reduction of existing public access to public lands due to occupancy associated with minerals activities.

The Programmatic EIS for Geothermal Leasing in the western United States, issued in December 2008, include provisions on lands open or closed to geothermal leasing and standardized stipulations, restrictions, and mitigations for geothermal exploration, development, and production. These conditions and restrictions will apply to the lands within the planning area except where this RMP EIS determines different or additional conditions or stipulations apply to specific locations.

The following restrictions would reduce the amount of land available for mining under all of the alternatives.

Salable

Designated WSAs, the Pine Forest mineral withdrawal, and the George Lund Petrified Forest mineral withdrawal, would be maintained as closed to mineral material disposal (salables) under all alternatives.

Leasable (Fluid and Solid)

All of the alternatives include requirements that neither fluid mineral or solid mineral leases would be allowed within a quarter mile of a WSA boundary. This would be accomplished by excluding from leasing any quarter-quarter section that was intersected by and including a portion of a WSA boundary.

Locatable

The existing withdrawals from locatable mineral development—Pine Forest, George Lund Petrified Forest, Lovelock Cave, and the FAA mineral withdrawals of Sod House and Lovelock—would continue under all alternatives. The existing segregation at Water Canyon would also continue and mineral withdrawal would be pursued. Additional lands identified for mineral withdrawal under all

alternatives is limited to Porter Springs (60 acres). The areas designated as closed to off-road vehicle use would continue to be open for acquiring rights to locatable minerals but would have additional limitations or stipulations applied to operations authorizations.

Individual Effects under Alternative A

General

Mining operations are required to implement reclamation of the mining operations including recontouring, stabilization, revegetation, or removal of facilities before closure. Mining operations would be required to implement existing guidance for revegetation resulting in self-sustaining vegetation communities.

Salable

With the goal to provide mineral materials for local communities and county, state, and federal agencies while protecting natural resources, 6,786,059 acres would be open to mineral material disposal. Disposals would be made in accordance with demand within those areas. The authorized officer may exercise discretion and deny sales or permits at specific sites if environmental analysis shows impacts that cannot be mitigated. Otherwise, stipulations would be applied as necessary to reasonably protect other resources on a case-by-case basis. Approximately 418,938 acres would be closed to mineral material disposal.

The mineral material community pit sites within the WDO planning decision area would continue to be evaluated and developed. The BLM would work with counties to provide free use permits for road development and maintenance.

Fluid

Leases would be offered on 6,745,878 acres of land open to fluid mineral leasing and development. Important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources on a case-by-case basis, 6,716,296 acres would be open with only standard lease terms and stipulations, no land would be open with additional seasonal or other restrictions, and 29,582 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 446,887 acres.

Solid

The leasing of Winnemucca Lake, Carson Sink, San Emidio Desert, and Smoke Creek Desert for sodium and potassium would be allowed, as the demand arises.

Exploration permits and subsequent leases could be offered on 6,766,198 acres of land open to solid mineral leasing and development, except where that would be incompatible with important resource values. Leasing would be closed on 416,652 acres.

Locatable

With the goal to have the planning area open to locatable mineral development, 7,198,294 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or have

additional limitations or stipulations applied to authorizations on 4,299,889 acres. Approved operations would be restricted to the extent required by existing law, regulation, or policy.

Individual Effects under Alternative B

General

Reclamation of the mining operations, including recontouring, stabilization, revegetation, and removal of facilities before closure, would be required only if there is no reasonable prospect for continued economic use. Mining operations would be required to implement the existing guidance on reclamation financial guarantees. Revegetation should result in self-sustaining vegetation communities. Species included may be native or introduced, and their seed should be commonly available and ordinarily inexpensive.

Salable

With the goal to maximize the development of mineral material resources and to support economic opportunities, 6,786,059 acres would be open to mineral material disposal. Disposals would be made in accordance with demand within those areas, except where they are incompatible with critical resource values. Stipulations would be applied as necessary to reasonably protect other resources on a case-by-case basis; 4,473,691 acres would be open with only standard authorization terms and stipulations, 1,445,244 acres would be open with additional seasonal or other restrictions, and 867,124 acres would be open only to permits to government entities for maintaining roads or other public facilities. Approximately 418,938 acres would be closed to mineral material disposal.

The availability of community pits and common use areas would be maximized, as well as the types of material and number of sites available from which to make sales. The availability of mineral materials to the public would be promoted. The BLM would work with municipalities and other eligible customers to maximize the number of free use permits and the associated production of mineral materials.

Fluid

Leases would be offered on 6,068,969 acres of land open to fluid mineral leasing and development, except where it would be incompatible with other critical resource values. Important resource values in otherwise open areas would be protected by applying stipulations necessary to reasonably protect other resources on a case-by-case basis; 4,472,814 acres would be open with only standard lease terms and stipulations, 1,374,431 acres would be open with additional seasonal or other restrictions, and 221,724 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,132,594 acres.

Solid

Leases would be offered on 6,068,498 acres of land open to solid mineral leasing and development, except where that would be incompatible with other critical resource values. Important resource values in otherwise open areas would be protected by applying stipulations necessary to reasonably protect other resources on a case-by-case basis; 4,472,950 acres would be open with only standard lease terms and stipulations, 1,373,904 acres would be open with additional seasonal or other

restrictions, and 221,644 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,124,266 acres.

Locatable

With the goal to manage locatable mineral operations to maximize the resource development and support economic opportunities, 7,198,294 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or would have additional limitations or stipulations applied to authorizations on 4,299,889 acres. Approved operations would be restricted to the minimum extent required by law or regulation. Off-site mitigation would be pursued only as required by law or regulation. Compliance inspections would be limited to the least number allowed by law, regulation, or policy and those that impose the least possible burden on the operator.

Individual Effects under Alternative C

General

Mining operations are required to implement reclamation of the mining operations including recontouring, stabilizing, revegetating, or removing facilities before closure. The preoperational topography and a historically native vegetation community should be established to the maximum extent possible. Mining operations would be required to implement the existing guidance for revegetation using a variety of native seed mixtures appropriate to a local ecological setting that would result in self-sustaining vegetation communities.

Salable

With the goal to manage mineral material resources to meet the needs of individuals, municipalities, and businesses, while ensuring compatibility with and protection of other resources and uses, 6,367,789 acres would be open to mineral material disposal. Disposals would be made in accordance with demand within those areas only where compatible with important resource values. Stipulations would be applied as necessary to reasonably protect other resources; 2,746,668 acres would be open with only standard authorization terms and stipulations, no land would be open with additional seasonal or other restrictions, and 3,621,121 acres would be open only to permits to government entities for maintaining roads or other public facilities. Approximately 837,049 acres would be closed to mineral material disposal.

The minimum number of community pits and common use areas would be designated that would meet reasonably foreseeable demand for commodities. These designated areas would have few or mitigable impacts on cultural or biological impacts, would be in appropriate locations, and would have sufficient capacity to avoid a proliferation of sites for similar materials in a given area. Preference would be given to sales from community pits or common use areas.

The BLM would work with municipalities and other eligible customers to provide free use permits with adequate volumes of material to meet their needs. Preference would be given to permits in community pits or common use areas.

Fluid

Leases would be offered on 2,749,810 acres of land open to fluid mineral leasing and development only where compatible with other resources, where important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources. These areas would be open with only standard lease terms and stipulations, no land would be open with additional seasonal or other restrictions, and no land would be open to leasing but would be subject to an NSO stipulation. Leasing would be closed on 4,455,028 acres.

Solid

Leases would be offered on 2,749,195 acres of land open to solid mineral leasing and development, only where it is compatible with other resources where important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources. These areas would be open with only standard lease terms and stipulations, no land would be open with additional seasonal or other restrictions, and no land would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 4,455,645 acres.

Locatable

With the goal to manage locatable mineral operations to meet the mineral needs of the nation, while ensuring maximum protection of resources, 6,922,945 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or would have additional limitations or stipulations applied to authorizations on 3,507,622 acres. Approved operations would have stipulations developed during the course of the interdisciplinary review, emphasizing the maximum protection of other natural and cultural resources. Off-site mitigation would be pursued in accordance with applicable law, regulation, and policy at every opportunity available. Compliance inspections would meet policy and be of sufficient frequency and detail to ensure conformance with the notice of approved plan and maximize protection of other resource values.

Individual Effects under Alternative D

General

Mining operations are required to implement reclamation of the mining operations, including recontouring, stabilizing, revegetating, or removing facilities before closure. Post-operational use and site reclamation configuration should be addressed in all relevant proposals for mineral operations and site development. Mining operations would be required to implement the existing guidance for revegetation using a variety of native and nonnative seed mixtures appropriate to the local ecological setting that will result in self-sustaining vegetation communities.

Salable

With the goal to manage mineral material resources to meet the needs of individuals, municipalities, and businesses, while ensuring compatibility with and protection of other resources and uses, 6,461,201 acres would be open to mineral material disposal. Disposals would be made in accordance with demand in those areas. Stipulations would be applied as necessary to reasonably protect other resources; 3,487,709 acres would be open with only standard authorization terms and stipulations,

1,202,535 acres would be open with additional seasonal or other restrictions, and 1,770,957 acres are open only to permits to government entities for maintaining roads or other public facilities. Approximately 743,301 acres would be closed to mineral material disposal.

Community pits and common use areas would be designated in locations and sizes to meet the existing and reasonably foreseeable demand for the commodity or commodities available at each site, where compatible with resource values, while avoiding a proliferation of sites for similar materials in a given area. Most available mineral material sites should be designated as community pits or common use areas.

The BLM would work with municipalities and other eligible customers to provide free use permits with adequate volumes of material to meet their needs. Preference would be given to permits in community pits or common use areas.

Fluid

Leases would be offered on 5,994,301 acres of land open to fluid mineral leasing and development, except where that would be incompatible with important resource values. Important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources; 4,008,025 acres would be open with only standard lease terms and stipulations, 1,659,533 acres would be open with additional seasonal or other restrictions, and 326,743 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,198,464 acres.

Solid

Leases would be offered on 5,994,123 acres of land open to solid mineral leasing and development, except where that would be incompatible with other important resource values. These values in otherwise open areas would be protected by applying stipulations necessary to reasonably protect other resources; 4,007,923 acres would be open with only standard lease terms and stipulations, 1,659,404 acres would be open with additional seasonal or other restrictions, and 326,796 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,198,694 acres.

Locatable

With the goal to manage locatable mineral operations to provide for the mineral needs of the nation, while ensuring compatibility with and protection of other resources and uses, 7,176,896 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or would have additional limitations or stipulations applied to authorizations on 3,028,008 acres. Approved operations would have stipulations developed during the course of the interdisciplinary review. Off-site mitigation would be pursued in accordance with applicable law, regulation, and policy as a last resort, such as if on-site options were not available for the impacted resource or use. Compliance inspections would meet policy and be of sufficient frequency and detail to ensure conformance with the notice or approved plan.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There are no effects common to all alternatives from recreation, visitor outreach, and services management.

Individual Effects under Alternative A

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on recreation, visitor outreach and services management objectives or actions under Alternative A. With respect to effects on mineral resources, Alternatives A and B are essentially equivalent.

Individual Effects under Alternative B

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on recreation, visitor outreach and services management objectives or actions under Alternative B. With respect to effects on mineral resources, Alternatives A and B are essentially equivalent.

Individual Effects under Alternative C

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations or leasable minerals operations would include restrictions in those areas identified for avoidance or exclusion of ROWs associated with specific RMZs. Salable minerals operations in these zones would be allowed only for government entities for maintaining roads or other public facilities. With respect to effects on mineral resources, Alternative C is more restrictive than are Alternatives A, B, and D.

Individual Effects under Alternative D

Leasable minerals operations would be restricted from those areas identified for avoidance or exclusion of ROWs associated with specific RMZs. Salable minerals operations in these zones would be allowed only for government entities to maintain roads or other public facilities. With respect to effects on mineral resources, Alternative D is less restrictive than Alternative C, but it would be more restrictive than Alternatives A and B.

Effects from Renewable Energy Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on renewable energy management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Avoiding duplication of roads and allowing continued public access on existing roads may result in greater levels of traffic on system roads. Under all alternatives, the primary users of system roads may be held responsible for funding or implementing road upkeep, especially where the mining-related traffic has higher level road design requirements than the BLM's.

Other than the conditions discussed above, there are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on transportation and access management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Lands and Realty Management

Effects Common to All Alternatives

There are no effects common to all alternatives from lands and realty management.

Individual Effects under Alternative A

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on lands and realty management objectives or actions under Alternative A.

Individual Effects under Alternative B

Fluid minerals operations would be restricted from those areas identified for exclusion of ROWs and on lands acquired under the Southern Nevada Public Land Management Act. Salable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities.

Lands acquired would be open to mineral material disposal in a manner consistent with the goals of the acquisition and considering the management applied to adjacent public lands. Alternative B is more restrictive of mining operations than are Alternatives A and D and is less restrictive than is Alternative C.

Individual Effects under Alternative C

Lands acquired (by any process) would be closed to mineral material disposal and would be withdrawn from mineral entry. Alternative C is more restrictive than are Alternatives A, B, and D.

Individual Effects under Alternative D

Lands acquired would be managed in a manner consistent with the goals of the acquisition and considering the management applied to adjacent public lands. Alternative D is more restrictive than Alternative A and less restrictive to mining activities than are Alternatives B and C.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

Under all alternatives, the BLM would continue to maintain the Osgood Mountains ACEC as closed to mineral disposal (salables) for the protection of the milkvetch (*Astragalus yoder-williamsii*) plant species. The designated ACECs and the Osgood Mountains ACEC would continue to be open for acquiring rights to locatable minerals but would have additional limitations or stipulations applied to operations authorizations. The BLM would continue to pursue a mineral withdrawal for the Osgood Mountains ACEC.

The Pine Forest mineral withdrawal and designated WSAs would be closed to salable mineral activities.

These restrictions would reduce the amount of land available for mining.

Individual Effects under Alternative A

The areas would be available to fluid leasable minerals exploration and development with an NSO stipulation. The restrictions on mining under Alternatives A and B are equivalent and are less than those under Alternatives C and D.

Individual Effects under Alternative B

The areas would be available to leasable minerals exploration and development with an NSO stipulation. The restrictions on mining activities under Alternatives A and B are equivalent, and less than, those under Alternatives C and D.

Individual Effects under Alternative C

The areas would be closed to leasable minerals exploration and development activities. The BLM would seek to withdraw ACEC lands from locatable mineral development on a case-by-case basis for the protection of important resource values. The restrictions on mining under Alternatives C and D are equivalent and are greater than those under Alternatives A and B.

Individual Effects under Alternative D

The areas would be closed to leasable minerals exploration and development activities. The BLM would seek to withdraw ACEC lands from locatable mineral development on a case-by-case basis for the protection of important resource values. The restrictions on mining under Alternatives C and D are equivalent and are greater than those under Alternatives A and B.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on backcountry byways management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from National Trails Management

Effects Common to All Alternatives

The rights to locatable minerals could be acquired, but proposals for mineral operations may be restricted within a mile of the California National Historic Trail.

Individual Effects under Alternative A

Other than the conditions discussed under Effects Common to All Alternatives above, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on national trails management objectives or actions under Alternative A. The restrictions on mining under Alternative A are less than those under Alternatives B, C, and D.

Individual Effects under Alternative B

The areas within a mile of the California National Historic trail would be open to fluid and solid minerals leasing with NSO stipulations. Salable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the trail or the mile buffer line would be subject to NSO stipulations. The restrictions on mining under Alternative B are greater than those under Alternative A and are less than those under Alternatives C and D.

Individual Effects under Alternative C

The areas within a mile of the California National Historic trail would be closed to fluid and solid minerals leasing, salable mineral operations. For fluid and solid leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the trail or the mile buffer line would be closed. The restrictions on mining under Alternative C are greater than those under Alternatives A, B, and D.

Individual Effects under Alternative D

The areas within a mile of the California National Historic trail would be closed to salable mineral operations. The areas within a mile of the California National Historic trail would be open to fluid and solid minerals leasing with NSO stipulations. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the trail or the mile buffer line would be subject to NSO stipulations. The restrictions on mining under Alternative D are greater than those under Alternative A and B and are less than those under Alternative C.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

The existing identified Wild and Scenic Rivers System and those areas designated for potential addition to the system would continue to be open for acquiring rights to locatable minerals but would have additional limitations or stipulations applied to operations authorizations.

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on wild and scenic rivers management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

The existing designated WSAs, designated wilderness areas, and areas with wilderness characteristics would continue to be open for rights to locatable minerals but would have additional limitations or stipulations applied to operations authorizations, in accordance with the Interim Management Plan for Lands Under Wilderness Review (IMP). The BLM would continue to manage 13 WSAs, totaling 508,186 acres, under the IMP until Congress either designates these areas or releases them for other purposes. Mining would generally not be allowed within these areas because the impacts would very likely violate the IMP.

Individual Effects under Alternative A

Other than the conditions discussed under Effects Common to All Alternatives above, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on wilderness and wilderness study areas management objectives or actions under Alternative A. Under Alternative A, there are no restrictions on the amount of land open to mining or limits on mining operations based on wilderness characteristics management objectives or actions. With respect to effects on minerals resources, Alternatives A and B are essentially equivalent.

Individual Effects under Alternative B

Other than the conditions discussed under Effects Common to All Alternatives above, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on wilderness and wilderness study areas management objectives or actions under Alternative B. There are no restrictions on the amount of land open to mining or limits on mining operations based on wilderness characteristics management objectives or actions under Alternative B. With respect to effects on minerals resources, Alternatives A and B are essentially equivalent.

Individual Effects under Alternative C

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations or leasable minerals operations would include restrictions in those areas identified for avoidance or exclusion of ROWs associated with the Pine Forest Range not included in the WSA or the Montana Mountains. Salable minerals operations in the Pine Forest Range would only be allowed for government entities for the maintenance of roads or other public facilities. Areas with wilderness characteristics would be closed to fluid and solid minerals leasing and salable minerals disposition. Alternative C is the most restrictive with respect to effects on minerals resources.

Individual Effects under Alternative D

Leasable minerals operations would be restricted from those areas identified for avoidance or exclusion of ROWs associated with the Pine Forest Range not included in the WSA or the Montana

Mountains. Salable minerals operations in the Pine Forest Range would be allowed only for government entities for maintaining roads or other public facilities. Under Alternative D, there are no restrictions on the amount of land open to mining or limits on mining operations based on wilderness characteristics management objectives or actions, although some wilderness characteristics would be afforded protection through restrictions from other resources management actions. With respect to effects on minerals resources, Alternative D is less restrictive than Alternative C and more restrictive than Alternatives A and B.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on watchable wildlife viewing sites management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

The BLM would benefit public safety by constraining or restricting the activities of the public on public land where there is a proven need to ensure safety or protect resources. These constraints could include fencing or otherwise closing dangerous, accessible mine shafts and adits and posting gravel pits and other potential dumping sites against illegal dumping.

Other than the conditions discussed above, there are no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on public health and safety management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Effects from Sustainable Development Management

Individual Effects under Alternative A

Under Alternative A, there are no restrictions on the amount of land open to mining or limits on mining operations based on sustainable development management objectives or actions. Potential benefits to mineral resource operations include improved capability or flexibility in acquiring public lands and less costly reclamation. With respect to effects on minerals resources, Alternatives A, C, and D are essentially equivalent.

Individual Effects under Alternative B

Under Alternative B, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on sustainable development management objectives or actions. Under Alternative B, existing guidance and standards for reclamation and closure would be deferred or delayed for up to five years from the end of active mining of sites that have a reasonable prospect for economic use. Alternative B is potentially more beneficial to mineral resource operations than Alternatives A, C, and D, due to improved capability or flexibility in acquiring public lands and less costly reclamation.

Individual Effects under Alternative C

Under Alternative C, there are no restrictions on the amount of land open to mining activities or limits on mining operations based on sustainable development management objectives or actions. Potential benefits to mineral resource operations include improved capability or flexibility in acquiring public lands and less costly reclamation. With respect to effects on minerals resources, Alternatives A, C, and D are essentially equivalent.

Individual Effects under Alternative D

There are no restrictions on the amount of land open to mining activities or limits on mining operations based on sustainable development management objectives or actions under Alternative D. Potential benefits to mineral resource operations include improved capability or flexibility in acquiring public lands and less costly reclamation. With respect to effects on minerals resources, Alternatives A, C, and D are essentially equivalent.

Cumulative Effects

Salable mineral extraction and use will increase, along with increasing mining activity, commercial development, recreation activities, and private property development, especially along the Interstate 80 corridor.

Nevada has the largest amount of untapped geothermal resources in the US, with six KGRAs in the WDO. In 1997, the Nevada legislature established a renewable energy portfolio standard requiring that as much as 15 percent of the total electricity sold should be derived from renewable energy resources. Based on the energy portfolio, renewable energy development is expected to increase, and is likely to include geothermal resources.

There are no areas of "high" oil and gas occurrence potential in the WDO. The USGS analysis indicates that the chance for the occurrence of a new oil or gas field of a certain size (one million barrels of oil or seven million cubic feet of natural gas) in the Western Great Basin Province study area is low.

Mineral exploration is an ongoing enterprise in the WDO. Exploration for gold has been extremely active recently (2004 to early 2006) as gold has sustained higher price levels. Prospects for sustaining Nevada's current mineral production rates in the short run are excellent and also quite likely in the long run (15-20 years). A significant increase in exploration and mining activity has occurred with increasing metal commodity prices. This increased activity has also increased the potential adverse effects on watershed and other resources in the planning area. Most of the effects are site specific and potential impacts are minimized by the requirement for environmental analysis during permitting of proposed exploration and mining activities.

4.3.3 Recreation and Facilities

Summary

Effects on recreation management from the proposed alternatives would result in a range of possible outcomes. Surface-disturbing activities, such as wildland fire management and mineral development, would have short-term and long-term effects on recreation users. This would be the

case if areas and activities were restricted or excluded until surface-disturbing activities had concluded, or if such activities were to change the landscape character or the available recreation opportunities.

Special designations, including Wilderness Areas, WSAs, and ACECs recommended as suitable for designation, affect recreation management. Typically, these designations protect important historical, cultural, and scenic values, which encourage nonmotorized and more primitive backcountry experiences. Opportunities for this type of recreation user would increase as the percentage of the designated acreage increases. Recreation users who prefer motorized travel as an activity or who require motorized travel to access an area could be affected if previously accessible areas were to become inaccessible to motorized travel.

Maintaining and possibly increasing SRMA designations would protect recreation resources and would encourage appropriate recreation in these areas. The focus in these designations would include the most popular activities within the WDO, such as camping, OHV use, pleasure driving, photography, and picnicking.

Table 4-52
Summary of Effects on Recreation—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Number of SRMAs	1	4	2	4
Acres of SRMAs	37,272	1,237,933	189,251	1,237,933
Number of RMZs	0	13	5	13
Acres open to OHV use	6,782,790	1,460,200	0	289,932
Acres with limited OHV use	416,652	5,445,218	7,143,177	6,878,592
Acres closed to OHV use	24,832	24,832	61,427	35,483

Recreation indicators were identified to assess environmental effects. The table below identifies the indicators that were used to analyze effects on recreation management under each alternative.

Alternatives B and D designate the greatest number of SRMAs and the largest amount of acreage with SRMA designations. Those two alternatives also designate the greatest number of RMZs. Alternative A designates no additional SRMAs but maintains the current Pine Forest SRMA designation, while Alternative D adds one designation. Alternative A has the fewest number of acres designated in SRMAs, and Alternative C has the second fewest acres.

OHV use, which is a very popular activity within the WDO, is open on the greatest number of acres under Alternative A, followed by Alternative B. Alternative D severely restricts open OHV use, and Alternative C completely precludes it. Limited OHV use occurs on roughly similar acreage under all the alternatives except Alternative A, which has the least acres with limited OHV use. Alternative C closes OHV use on the most acres, followed by Alternative D. The same number of acres are closed to OHV use under Alternatives A and B.

Methods of Analysis

Methods and Assumptions

This section presents potential impacts of the alternatives on outdoor recreation and visitor services, as determined through potential changes to visitor and community resident preferences (activities, experiences, benefits), recreation setting conditions (physical, social, administrative), recreation management (resources, signing, facilities), recreation marketing (visitor services, information, interpretation, and environmental education), recreation monitoring (inventory, monitoring), and recreation administration (permits and fees and visitor limits and regulations), as they are described in Chapter 3. These recreation features are interrelated and connected to access. For example, changes in recreation settings would result in corresponding changes in opportunities to achieve desired recreation experiences and associated benefits, influenced by access.

Recreation experiences and the potential attainment of a variety of beneficial outcomes are vulnerable to any management action that would alter the settings and opportunities in a particular area. Recreation settings are based on a variety of attributes, such as remoteness, the amount of human modification in the natural environment, evidence of other users, restrictions and controls, and the level of motorized vehicle use. Management actions that greatly alter such features within a particular portion of the planning area could affect the capacity of that landscape to produce appropriate recreation opportunities and beneficial outcomes.

The analysis of potential impacts on recreation is based on IDT knowledge of the planning area and visitor use reporting statistics from the WDO and the Recreation Management Information System, which provide information on the amount and types of recreation. Spatial GIS information was also used in this analysis and includes wildlife habitat boundaries, wilderness characteristic boundaries, transportation inventory and designations, ecological zones and vegetation types, recreation sites, historical and recreational trails, known historical and cultural sites, visual resource management classifications, and grazing allotments. Effects are quantified where possible. In the absence of quantitative data, best professional judgment was used, and impacts are expressed in qualitative terms.

The analysis was based on the following assumptions:

- The demand for recreation use would continue to increase;
- Recreation visits would continue to increase;
- The incidence of resource damage and conflicts among recreationists involved in mechanized, motorized, and nonmotorized activities would increase as use of public lands increases;
- Anticipated increases would include OHV use; and
- Users would continue to develop trails.

Effects from Air Quality Management

Effects Common to All Alternatives

Improved air quality, including dust control, would improve the quality of recreation within the WDO, particularly appreciation of scenic vistas and driving for pleasure. However, implementing dust control measures could increase the costs of construction of new facilities and access roads, thereby potentially limiting those types of improvements for recreationists.

Effects from Geology Management

Effects Common to All Alternatives

Under all alternatives, management actions that establish additional protection for geological features would increase recreation opportunities for viewing, hiking, and photography associated with these features.

Individual Effects under Alternative A

Alternative A would have the fewest impacts on OHV use of all of the alternatives. Maintaining open OHV travel use within geologic resource zones under Alternative A would allow the greatest opportunities for motorized recreation of all of the alternatives.

Individual Effects under Alternative B

OHV travel use would change from the current designation of open under Alternative A to a designation of limited for existing roads and trails within geologic resource zones under Alternative B. This management action would restrict OHV users, thereby reducing OHV opportunities.

Individual Effects under Alternative C

Under Alternative C, geologic resource zones would be closed to OHV travel use. Therefore, Alternative C has the greatest impacts on OHV use from geology management since OHV use remains open in geologic exclusion zones under Alternative A and is limited to existing roads and trails under Alternatives B and D. Alternative C restricts OHV users and reduces OHV opportunities more than any of the alternatives.

Individual Effects under Alternative D

Impacts from Alternative D are the same as those described under Alternative B.

Effects from Soil Resources Management

Effects Common to All Alternatives

All four alternatives minimize breaking up or shearing biological crusts. Achieving this management objective could limit or eliminate OHV travel use and other recreation, either seasonally or year-round.

Individual Effects under Alternative A

Alternative A would have the potential to restrict recreation because it seeks to minimize breaking up or excessive shearing to biological soil crusts, particularly when soil surfaces are dry. However, unless limitations or closures were imposed, effects on recreation are unlikely.

Individual Effects under Alternative B

Alternative B would likely affect recreation, including OHV use, at about the same level as Alternative A and less than Alternative C. A variety of methods could be used to maintain and improve various soil surface components, thereby reducing the likelihood that those objectives would be achieved through area or seasonal closures or limitations on OHV use and other recreation.

Individual Effects under Alternative C

Alternative C has the greatest likelihood of restricting recreation. This alternative would seasonally eliminate surface disturbances in areas with high potential for biological crusts, thus seasonally restricting OHV use and other recreation in those areas. Consequently, these options have the greatest potential for impacts on OHV use and other recreation, including commercial activities and competitive events, of any of the alternatives.

Individual Effects under Alternative D

Of the four alternatives, Alternative D has the least potential for impacts on OHV use and other types of recreation in some areas. OHV and other restrictions would be limited to areas with minimal vegetative cover, including naturally erosive areas, such as washes, playas, and barren dunes. Additionally, methods other than reduction or elimination of OHV travel use and other recreation could be used to improve soil components. Therefore, the likelihood of impacts on recreation, including OHV use, under this alternative is less than under the other three alternatives.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from water resource management.

Individual Effects under Alternative A

Water resources management under Alternative A would be the least likely to affect recreation settings or opportunities within the WDO because it does not restrict public use of priority watersheds.

Individual Effects under Alternative B

Although all three action alternatives would designate 190,210 acres of priority watersheds, Alternative B would have the least effect on recreation since the watersheds would be managed for multiple uses. It is possible that no effect on recreation would occur.

Individual Effects under Alternative C

Alternative C would potentially have the greatest effect on recreation of the four action alternatives. This is because priority watersheds would be exclusion areas for discretionary actions that are considered incompatible with the resource for which the priority was created. OHV travel use, commercial activities, and competitive events would all likely be excluded from priority watersheds due to their impacts on vegetative cover, soil compaction, erosion, and human waste. Camping and other recreation could also be excluded due to their potential effects on watersheds.

Individual Effects under Alternative D

Alternative D has the potential to restrict recreation since priority watersheds would be avoidance areas for discretionary actions considered incompatible with the priority use. A variety of recreational activities could affect watersheds, particularly OHV travel use, commercial activities, competitive events, and camping. Such impacts occur through denuded vegetative cover, soil compaction, erosion, and human waste.

Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

The use of mechanical or biological treatments to achieve stand health, structure, and species composition objectives would affect the recreation setting and opportunities in treated areas. Effects on recreation would occur whether the fire is prescribed or if a natural fire regime is allowed. The designation, or lack thereof, of acres of old growth forest also affects the availability of a primeval and unique type of recreation setting.

Individual Effects under Alternative A

Alternative A prescribes fire to enhance deteriorated aspen and cottonwood stands. Since the use is limited to these forest types only, the effects on recreation under this alternative would be minimal. Recreationists who find recently burned areas objectionable and choose to avoid those areas would have many other areas available to recreate. Management closures until revegetation occurred would also redirect recreation to other areas.

The use of fencing, clear cutting, or herbicides to enhance aspen and cottonwood stands would create visual and barrier effects that would change recreation settings and opportunities. In particular, OHV use would be restricted by fencing. However, since such treatments would be limited to aspen and cottonwood, effects would likely not be widespread.

Alternative A does not designate any acres of old growth forest, which precludes the availability of the recreational setting and the opportunities afforded by this type of ecosystem.

Individual Effects under Alternative B

The effects on recreation from Alternative B are similar to those described under Alternative D and are greater than those under the other alternatives. Alternative B uses wildland fire in addition to prescribed fire as a management tool to enhance aspen and other stands. Consequently, both the types of stands and the extent of the area affected could be large. The recreational setting would be

changed in recently burned areas, and some recreationists would avoid such areas, thereby potentially decreasing the spectrum of recreation opportunities and increasing recreational use in other areas. Management closures put in place until revegetation occurred would also direct recreation to other areas.

Alternative B uses fencing, mechanical, biological, or chemical treatments, and planting and seeding to achieve stand objectives. Such treatments would create visual and barrier effects that would change recreational settings and opportunities. In particular, OHV use would be restricted by fencing. Treatments could be widespread, thereby increasing the effects on recreation. Alternative B also includes firewood harvesting areas, which would increase human presence and noise in those areas and would change the visual appearance of the stand. All of those effects would change the recreational setting and opportunities in firewood harvest areas. Alternatives B and D are similar, would have similar effects on recreation, and represent the potentially greatest effects on recreation of the four alternatives.

Like Alternative A, this alternative does not designate any acres of old growth forest. Effects on recreation are similar to those under Alternative A.

Individual Effects under Alternative C

The effects on recreation from Alternative C would be the least of any of the alternatives since natural fire regimes would be allowed, but fire would not be prescribed as a management tool; however, effects could be widespread in the event of a large wildfire. In that case, effects on recreation would likely exceed those under Alternative A, which uses prescribed fire only in deteriorated stands of cottonwood and aspen. Recreational effects are the same as those described under Alternatives B and D.

The effects on recreation under Alternative C from the use of stand management methods are similar to but less widespread than those under Alternatives B and D. Alternative C does not include firewood harvest areas.

Alternative C designates 27,605 acres of old growth forest, as does Alternative D. These three alternatives offer an opportunity to recreate in an old growth forest setting.

Individual Effects under Alternative D

The effects on recreation from Alternative D are the greatest of any of the alternatives. The effects are similar to those under Alternative D, but the use of fire as a management tool would potentially be more widespread. Wildland fire also would be used as a tool. Consequently, both the types of stands and the extent of the area affected could be large. Effects on recreation are the same as those described under Alternatives B and C..

The effects on recreation under Alternative D from the use of stand management methods are similar to those under Alternative B.

Alternative D designates 27,605 acres of old growth forest, as does Alternative C. The effects on recreation are similar to those described under Alternative C.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Under all alternatives, weed management would have only a small effect, if any, on recreation. However, over time, effective weed management would improve the quality of the recreation settings by improving the health of ecosystems, thereby increasing recreational opportunities, such as photography, wildlife viewing, and scenic appreciation. No discernable difference in effects on recreation would occur from the individual alternatives.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

Chemical and biological control would have a small effect, if any, on recreation. However, effective pest management would improve the quality of recreation settings and experiences over the long term as ecosystem health improved. No discernable difference in effects on recreation would occur from the individual alternatives.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

All four of the alternatives would affect recreation and OHV use patterns through land treatments to improve degraded rangelands.

Individual Effects under Alternative A

Alternative A would have a short-term effect on recreation and OHV use through land treatments to improve degraded rangelands. Prescribed fire would likely result in short-term closures of areas for recreation and OHV use, both during treatment and possibly afterwards to protect exposed soil surfaces from erosive and to allow vegetation to become established. Recreation in these areas would be temporarily displaced, and recreational use patterns would be temporarily altered.

Individual Effects under Alternative B

The effects on recreation and OHV use from Alternative B are greater than those from Alternative A and are similar to the effects under Alternatives C and D. Land treatments, including fire, would be used under this alternative, but Alternative B would also employ fencing and use restrictions that would likely displace some recreational activities and would change some recreational use patterns on a long-term basis.

Individual Effects under Alternative C

The effects on recreation and OHV use under Alternative C from land treatment methods to improve degraded rangelands are similar to those described under Alternatives B and D.

Individual Effects under Alternative D

The effects on recreation and OHV use under Alternative D from land treatment methods to improve degraded rangelands are similar to those described under Alternatives B and C.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Placement of structures or fencing would affect recreational use patterns under all the alternatives.

Individual Effects under Alternative A

Restoration of degraded riparian areas could inhibit recreational access and use patterns in the affected areas by fencing and the construction of structures. Effects on recreation are similar to but not as large or widespread as under Alternative B since fewer management actions are proposed under this alternative.

Individual Effects under Alternative B

Implementing BMPs to address nongrazing impacts on riparian areas would affect recreation use patterns, settings, and experiences. In particular, closure or relocation of routes and elimination or hardening of stream crossings would affect recreationists, particularly those using OHVs. Access to some areas could become more difficult if routes were closed or changed. Eliminating stream crossings could also affect access to some areas. However, route changes and hardening of stream crossings could allow access to areas that were previously inaccessible. All of these management actions would affect recreation use patterns. Over the long term, the recreational setting and experiences in currently degraded riparian areas would change as the condition of the ecosystem changes. The activities most likely to be affected are OHV use, fishing, wildlife viewing, hiking, and camping. The effects on recreation under Alternatives B, C, and D are similar.

Individual Effects under Alternative C

Effects on recreation are similar to those described under Alternatives B and D.

Individual Effects under Alternative D

Effects on recreation are similar to those described under Alternatives B and C.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There are no effects common to all alternatives from fish and wildlife management.

Individual Effects under Alternative A

No priority wildlife habitat areas would be designated under Alternative A, so no effects on recreation would occur.

Individual Effects under Alternative B

There could be effects on recreation if restrictions were imposed through the application of mitigation measures for priority habitats.

Individual Effects under Alternative C

The potential effects on recreation are the same as those described under Alternative B.

Individual Effects under Alternative D

The potential effects on recreation are the same as those described under Alternative B.

Effects from Special Status Species Management

Effects Common to All Alternatives

Management actions in all of the alternatives to protect sensitive plant species and their habitats would affect recreation by limiting surface-disturbing activities, which would likely restrict special events and OHV use. Recreation would also be affected by actions to protect bat habitat, including restrictions on human access to occupied adits and caves, which would limit spelunking. Effects on recreation use patterns could occur from use restrictions to protect documented northern goshawk nest areas and sites.

Individual Effects under Alternative A

Alternative A would impose seasonal and use restrictions to protect the habitat of sensitive plant species. These restrictions would affect recreation opportunities seasonally and intermittently, which would result in temporary alterations in recreation use patterns. Restrictions could include prohibitions on OHV use, commercial activities, and special events, and possibly on other recreation activities, such as horseback riding, mountain biking, hiking, or camping. Restrictions, and the resulting effects on recreation, would be temporary, intermittent, and limited in scope.

Management actions to protect bat habitat would affect recreation. Large-scale, surface-disturbing discretionary actions such as special events, would be prohibited within 200 yards of habitat. Human access to occupied adits and caves would be restricted by bat gates, which would limit opportunities for spelunking and would redirect opportunities to those caves not inhabited by bats. Both actions would alter recreation use patterns.

Effects on recreation use patterns could also occur from use restrictions to protect documented northern goshawk nest areas and sites.

Individual Effects under Alternative B

The effects on recreation from management actions to protect sensitive plant species and their habitat are similar to those under the other alternatives.

Management actions to protect bat habitat would affect recreation less under Alternative B than under Alternatives A, C, and D, all of which have similar effects. Large-scale, surface-disturbing discretionary actions, such as special events, would be allowed under this alternative, subject to

mitigation. However, like the other alternatives, human access to adits and caves would be restricted, thereby limiting spelunking. Effects on recreational use patterns from protection of northern goshawk nest areas and sites are the same under all alternatives.

Individual Effects under Alternative C

Effects on recreation from management actions to protect sensitive plant species are similar to those described under the other alternatives.

Use prohibitions and restrictions to protect sage-grouse leks would prohibit recreation in some areas year-round and would limit recreation in other areas seasonally. Surface disturbance within two miles of sage-grouse leks would be prohibited. Human activity would be avoided during evenings and nights between March 1 and May 20 within a quarter mile of occupied leks. Some alteration of recreational use patterns would likely result, and overall effects on recreation would be greater than under Alternative D.

Effects on recreation from management actions to protect bat habitat are similar to those described under Alternatives A and D.

Effects on recreational use patterns from protection of northern goshawk nest areas and sites are the same under all alternatives.

Individual Effects under Alternative D

Effects on recreation from management actions to protect sensitive plant species are similar to Alternatives A and C.

Effects on recreational use patterns from use prohibitions and restrictions to protect sage-grouse leks are the most pronounced under Alternative D. This alternative prohibits surface disturbances within a quarter mile of occupied leks, which constitutes a smaller protective area than under Alternative C.

Effects on recreation from management actions to protect bat habitat are similar to those described under Alternatives A and C.

Effects on recreational use patterns from protection of northern goshawk nest areas and sites are the same under all alternatives.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Restrictions on commercial activities and competitive events would be imposed in HMAs under all of the alternatives to protect the health and welfare of WHBs.

Individual Effects under Alternative A

Under Alternative A, commercial activities and competitive events would be allowed in HMAs, but safeguards and mitigation measures would be imposed to protect the health and welfare of WHBs.

These protective measures could include seasonal closures and rerouting of courses, thereby changing recreation patterns.

Individual Effects under Alternative B

The management measures and potential effects on recreation under Alternative B are similar to those under Alternatives A and D.

Individual Effects under Alternative C

Alternative C disallows commercial activities and competitive events that would negatively affect the health and welfare of WHBs unless those effects are minimal. Therefore, Alternative C has the greatest potential to affect recreation of any of the other alternatives.

Individual Effects under Alternative D

The management measures and potential effects on recreation under Alternative D are similar to those described under Alternatives A and B.

Effects from Wildland Fire Management

Effects Common to All Alternatives

All alternatives would suppress wildland fires that meet specific criteria, which would minimize fire-related interference with recreational activities and experiences. Fuel breaks would protect SRMAs and infrastructure. Recreation areas with infrastructure would become priority suppression areas under a response to wildfires, based on social, legal, and ecological consequences of the fire, in order to protect property. Unsuppressed wildland fires would likely result in temporary closures until revegetation occurred, thereby changing recreational use patterns and reducing recreational opportunities in some areas. No discernable difference in effects on recreation would occur for the individual alternatives.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Implementing site-specific measures for cultural resources, including protecting scenic viewsheds and historic trails, would protect these resources of interest to the recreating public. However, these measures could restrict the development of recreational facilities and related opportunities.

Individual Effects under Alternative A

Alternative A would preserve and protect cultural resources, which are of interest to the recreating public. OHV use would continue to be allowed on 5,650 acres around Lovelock Cave and Lovelock Cave Backcountry Byway. The California National Historic Trail would also be preserved for its historic and scenic values, thereby continuing to provide a unique recreational opportunity. Class I, II, III, IV, and V segments of the National Historic Trails would remain open to OHV use.

Management measures and use restrictions to protect cultural resources would also limit and change recreational use. Physical conservation measures, such as signs and fences, would alter recreational

settings and experiences and would likely alter use patterns. Administrative measures, such as mineral withdrawal, closure to public access, and prohibition of OHV use, would preclude recreation in some areas, particularly to those recreationists who depend on motorized transportation to access public lands.

Individual Effects under Alternative B

The effects on recreation from Alternative B are similar to those under Alternative A. However, Alternative B also protects the viewshed of the Lovelock Cave Backcountry Byway to VRM Class III, which provides an opportunity for scenic driving, although the level of aesthetic protection is not as great as that under Alternatives C and D.

Individual Effects under Alternative C

The effects on recreation from Alternative C are similar to those described under Alternatives A and B. However, Alternative C protects the viewshed of the Lovelock Cave Backcountry Byway to a VRM Class II, which ensures a more scenic driving opportunity over the long term than under Alternatives A and B. Additionally, Alternative C would limit OHV use to existing roads and trails on the 5,650 acres around Lovelock Cave and Lovelock Cave Backcountry Byway.

Individual Effects under Alternative D

The effects on recreation from Alternative D are the same as those described under Alternative C.

Effects from Tribal Consultation

Effects Common to All Alternatives

Under all alternatives, management actions would continue to protect traditional religious sites and other areas of concern, which could restrict recreation that interferes with the maintenance and protection of these resources.

Individual Effects under Alternative A

The effects of tribal consultation on recreation and facilities under Alternative A are the same as those identified under Effects Common to All Alternatives.

Individual Effects under Alternative B

Under Alternative B, recreational activities would be restricted in some areas by use restrictions and other management actions implemented to protect traditional religious sites and other areas of concern.

Individual Effects under Alternative C

The effects on recreation under Alternative C are greater than those under Alternative B because Alternative C uses emergency, temporal, and seasonal closures to protect traditional religious sites and other areas of concern. This would preclude recreational activities in certain areas at various times of the year.

Individual Effects under Alternative D

The effects on recreation under Alternative D are the same as those described under Alternative C..

Effects from Paleontological Resources Management

Individual Effects under Alternative A

Alternative A would implement physical conservation measures, such as signs, fences, and administrative conservation, to protect paleontological resources. These measures could restrict or exclude recreation and could also affect recreational settings.

Individual Effects under Alternative B

Activities on public lands would not be authorized under Alternative B if any potential damage to paleontological resources would occur, unless impacts could be mitigated. This restriction could limit recreation in some areas, particularly commercial activities, special events, and OHV use. Alternative B would also implement physical conservation measures, such as signs, fences, and administrative conservation, which would further restrict or exclude recreation and could also affect recreational settings.

Individual Effects under Alternative C

Discretionary activities on public lands would not be authorized under Alternative C if any potential damage to paleontological resources would occur, unless impacts could be mitigated. This restriction could limit recreation in some areas, particularly commercial activities, special events, and OHV use. Like the other three alternatives, Alternative C would implement physical conservation measures, such as signs, fences, and administrative conservation, which would further restrict or exclude recreation and could also affect recreational settings. Additionally, mineral withdrawals, closure of public access, and prohibition of OHV use could occur. Recreation would be precluded to all recreationists in some areas and to those who depend on motorized access in other areas.

Individual Effects under Alternative D

The effects on recreation are the same as those described under Alternative C.

Effects from Visual Resources Management

Effects Common to All Alternatives

Visual resources would be managed under all four VRM Class designations, which would allow for varying retention of the existing landscape, depending on the alternative. Greater retention of the viewshed offers recreationists a more primitive experience, but it also restricts potential development of recreational facilities, roads, and trails.

Individual Effects under Alternative A

Alternative A manages visual resources on 7,177,644 acres under all four VRM Class designations, including 56,771 acres with unknown class designations. It designates 420,286 acres as Class I, thereby affording the highest level of visual retention to the greatest number of acres of any of the

alternatives. However, it also designates 5,674,423 acres as Class IV, which is the least protective designation and also the greatest number of acres with that designation of any of the alternatives.

Since Class I preserves the viewshed, it offers the most primitive recreation experience. Conversely, it restricts potential development of recreational facilities, roads, and trails that could be in demand by other recreationists. Class IV allows for major modifications to the landscape, so development of recreational facilities, roads, and trails would be allowed.

Alternative A designates 346,386 acres as Class II, which retains the existing landscape but allows for a low level of change, and 679,777 acres as Class III, which mandates partial retention of the viewshed. These two classes would allow a mixed recreational setting and experience, consisting of a relatively primitive viewscape, while allowing some recreational (and other) development to occur.

Individual Effects under Alternative B

Alternative B manages visual resources on 7,205,493 acres under all four VRM Class designations. It designates 416,582 acres as Class I, 117,694 acres as Class II, 1,022,406 acres as Class III, and 5,648,812 acres as Class IV. The number of acres designated as Class I is the same as for Alternatives C and D. However, the number of acres for Class II, which retains the landscape and allows for a low level of change, is the lowest number of acres of any of the alternatives. The number of acres in Class III is more than under Alternative A but less than under the other alternatives, and the number in Class IV is the second greatest of any of the alternatives. Overall, Alternative B allows for the greatest potential change in the viewscape. This reduces the area available with a primitive viewscape, thereby reducing the amount of that recreational setting and experience. It also allows for the most potential development within the viewshed, some of which could benefit recreationists who desire a less primitive experience.

Individual Effects under Alternative C

Alternative C manages visual resources on 7,205,493 acres under all four VRM Class designations. They designate 416,582 acres as Class I, 2,923,959 acres as Class II, 2,708,948 acres as Class III, and 1,156,005 acres as Class IV. The number of acres designated as Class I is the same as for Alternatives B and D. However, the number of acres for Class II, which retains the existing landscape and allows for a low level of change, is the greatest number of acres of any of the alternatives. This largely preserves a primitive recreational setting and experience. The number of acres in Class IV is much less than under Alternatives A or B and would not allow as much change in the viewshed or as much recreational development.

Individual Effects under Alternative D

Alternative D manages visual resources on 7,196,212 acres under all four VRM Class designations. It designates 416,582 acres as Class I, 2,775,496 acres as Class II, 3,283,456 acres as Class III, and 720,678 acres as Class IV. The number of acres designated as Class I is the same as for Alternatives B and C. The number of acres for Class II is less than Alternative C, and the number of acres, for Class III is greater than Alternative C. Class IV acres are the least of any alternative. Overall, Alternatives C and D allow roughly the same amount of change in the viewscape and would have similar effects on recreation.

Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from cave and karst resource management.

Individual Effects under Alternative A

Alternative A does not address management of cave and karst resources, so it would have no impact on recreation.

Individual Effects under Alternative B

Under Alternative B, implementing seasonal closures, avoidance, and fencing to protect sensitive features and bats could temporarily preclude recreation activities at or near karst features.

Individual Effects under Alternative C

Alternative C could be more restrictive of recreation at or near karst features by prohibiting surface-disturbing activities within 500 feet of natural caves or karsts.

Individual Effects under Alternative D

The effects of cave and karst resources management on recreation and facilities under Alternative D are the same as those identified under Alternative B.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Under all alternatives except Alternative C Option 2, the presence of livestock and rangeland facilities, could affect recreational settings, use patterns, and activities. Fencing in particular would disrupt recreation. Any types of use requiring cross-country travel could be affected, but OHV use would be most affected by fencing. Individual alternatives differ in the acreage of overlap between grazing and recreation.

Individual Effects under Alternative A

Under Alternative A, livestock grazing management would result in the continued presence of cattle, sheep, and rangeland facilities on 8,228,528 acres. Only 293,447 acres would be closed to grazing. The effects of this are the same as those described under Effects Common to All Alternatives.

Individual Effects under Alternative B

The number of acres open and closed to grazing and the effects on recreation are the same as those described under Alternative A.

Individual Effects under Alternative C

Option 1

Livestock grazing management would result in the continued presence of cattle, sheep, and rangeland facilities on 8,228,845 acres, which is a decrease of 2,683 acres from the current condition (Alternative A). However, that represents a decrease of less than one percent of the total acreage currently available to grazing, which would not be a discernable change to a recreationist. Only 296,130 acres would be closed to grazing. The effects on recreation would be virtually identical to those described under Alternatives A and B.

Option 2

The effects on recreation are the greatest under this option since no acres would be open to livestock grazing and 8,521,975 acres would be closed. No conflicts between livestock and recreationists would occur; the presence of livestock and their effect on recreational settings would be eliminated, and no effects on OHV use from new range facilities, particularly fencing, would occur.

Individual Effects under Alternative D

Livestock grazing management would result in the continued presence of cattle, sheep, and rangeland facilities on 8,195,637 acres, which is a decrease of less than one percent from the current condition (Alternative A). Only 326,337 acres would be closed to grazing. This represents about a 10 percent increase in the number of closed acres over the current condition and is the greatest number of acres closed to grazing under any of the alternatives, except for Option 2 of Alternative C. However, the number of closed acres is such a small percentage of the total acreage open to grazing that the effects on recreation would likely not be noticeable to recreationists. Therefore, the effects on recreation are similar to the other alternatives.

Effects from Minerals Management

Effects Common to All Alternatives

General

Minerals management activities involving heavy equipment, new roads, well pads, and other facilities would directly affect recreationists in the short term by restricting areas where these activities are occurring. Over the long term, surface disturbances that create effects on the scenic quality and the natural landscape would indirectly affect recreation experiences. Minerals management could affect all areas except those closed to mineral activities. NSO requirements would alleviate impacts on recreation in those designated areas. The individual alternatives differ in the acreage and location of closures and NSO requirements; however, it is possible that the amount of actual minerals activity would not differ among alternatives.

Individual Effects under Alternative A

Under Alternative A, the fewest acres would be closed to mineral activities or would have NSO requirements. Consequently, Alternative A would be the most likely to have effects common to all alternatives.

Individual Effects under Alternative B

A larger area would be closed to mineral activities under Alternative B than under Alternative A, and a larger area would be subject to NSO requirements. Therefore, Alternative B would be less likely than Alternative A to affect recreation, as described under Effects Common to All Alternatives.

Individual Effects under Alternative C

The greatest restrictions on mineral activities would occur under Alternative C, which therefore would be the least likely of all alternatives to affect recreation, as described under Effects Common to All Alternatives.

Individual Effects under Alternative D

The likelihood that mineral activities would affect recreation under Alternative D would be intermediate between Alternatives B and C because the area closed or under NSO requirements would be intermediate between these two alternatives.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Interpretive programs and activities would be maintained and enhanced under all alternatives. Public information would be provided for those natural and cultural sites designated for public use (such as Lovelock Cave). Partnerships with non-BLM entities would be pursued to accomplish management objectives, including visitor outreach programs. Lands would be managed to provide dispersed and water-based recreation, and SRMAs would continue to be managed. Existing facilities in Water Canyon and on the Bloody Shins trail network would continue to be maintained. Thus, a wide array of recreational settings and opportunities would continue to exist on WDO lands.

Individual Effects under Alternative A

In addition to the effects common to all alternatives, the number of SRMAs would remain constant, and the Pine Forest SRMA would remain at 37,272 acres. SRPs would continue to be issued on a case-by-case basis, and resources would continue to be protected by use restrictions, stipulations, and mitigation measures. Most of the planning area, 6,782,790 acres, would continue to be open to OHV use. The number of acres closed to OHV use (24,832) would decrease slightly. WSAs would be managed to limit OHV use to existing ways and trails, thereby limiting motorized access in those areas but also protecting primitive recreation opportunities. Overall, the current array of recreational settings and opportunities would continue under Alternative A, and current use patterns also are likely to remain relatively constant.

Individual Effects under Alternative B

In addition to the effects common to all alternatives, Alternative B would foster the development of volunteer, restoration, and stewardship programs and would foster scientific research for WDO lands. This would improve the condition of resources within the WDO over the long term, thereby enhancing recreational opportunities. Educational outreach programs would also benefit the recreating public through increased awareness of activities that impact public lands and methods to reduce such impacts. Implementing an adaptive management model would provide recreation experiences and protect resources.

The Winnemucca Resource Area would be designated as an ERMA containing 6,013,947 acres, all of which would be open to dispersed recreation. Numerous regulations would be instituted to protect resources, which would maintain the quality of the recreational setting over the long term.

Three SRMAs containing RMZs and 1,138,829 acres would be designated under Alternative B. In addition, the Pine Forest SRMA would expand to include 3 RMZs and 99,104 acres. Each SRMA and RMZ would be managed to provide specific experience opportunities, including motorized and mechanized use, primitive areas, and isolation and close-to-town experiences. Potential activities include hiking, fishing, camping, backpacking, mountain biking, picnicking, enjoying interpretive sites, horseback riding, and ATV and OHV riding.

Most of the planning area, 5,445,218 acres, would allow limited OHV use. Only 1,460,200 acres would be open, and 24,832 acres would continue to be closed to OHV use. Recreationists who depend on motorized access to public lands would have their recreational opportunities limited by this alternative; however, they would not be precluded from recreating on WDO lands. Over the long term, recreational settings would likely be enhanced by reducing resource degradation associated with open OHV use.

Individual Effects under Alternative C

In addition to the effects common to all alternatives, the management actions and effects on recreation from Alternative C are the same as under Alternative B, with some exceptions. A total of 7,168,451 acres would be designated as an ERMA, which is an increase of 1,154889 acres over Alternative A. One SRMA containing a total of five RMZs and 151,979 acres would be designated under Alternative C. The array of recreational opportunities managed for in the SRMA would be more limited than under Alternative B, primarily providing close-to-town activities rather than isolated primitive experiences.

Alternative C uniquely affects OHV use. Most of the planning area, 7,143,177 acres, would allow limited OHV use, which is the most acres designated as limited OHV use under any of the alternatives. No acres would be designated as open OHV use, which distinguishes Alternative C as the only alternatives that completely preclude open OHV use. Additionally, 61,427 acres would be closed, which represents the greatest number of acres closed to OHV use under any of the alternatives. OHV users who enjoy open use would be most affected by these options. However, since most of the area remains available to limited OHV use, those who depend on motorized access to public lands would not be precluded from recreating on WDO lands. Like Alternative B, over the long term, recreational settings would likely be enhanced by reducing resource degradation associated with open OHV use.

Individual Effects under Alternative D

In addition to the effects common to all alternatives, the management actions and effects on recreation from Alternative D are the most similar to those described under Alternative B. The differences lie in OHV use designations and their subsequent recreational effects. Under Alternative D, 6,878592 acres would allow limited OHV use. This represents most of the lands in the WDO. A total of 289,932 acres would be designated as open OHV use, and 35,483 acres would be closed. Fewer acres would be open than under Alternatives A or B. The effects from limited OHV use designations are slightly greater than those under Alternative B.

Effects from Renewable Energy Management

Effects Common to All Alternatives

The leasing of public lands for wind energy development and the authorization of new renewable energy ROWs could have effects similar to those described under Individual Alternative Effects from Minerals Management, Effects Common to All Alternatives. Similar to minerals management, the probability of effects is higher for those alternatives with the smallest avoidance and exclusion areas; however, it is possible that the amount of actual renewable energy activity would not differ among alternatives.

Individual Effects under Alternative A

Alternative A would maintain existing exclusion zones, which would be protected from renewable energy use and would allow continued recreational use. The area covered by ROW exclusion would be greater than under Alternative B (with no exclusion zones) but less than under Alternatives C and D. Therefore, it is more likely that Alternative A would affect type and level of recreation than Alternatives C and D.

Individual Effects under Alternative B

No exclusion zones for renewable energy ROWs would be designated under Alternative B, so that alternative is the most likely to affect recreation within the WDO.

Individual Effects under Alternative C

Alternative C would designate the largest area for exclusion and, therefore, would be the least likely to affect recreation activities and experiences.

Individual Effects under Alternative D

Under Alternative D the area covered by ROW exclusion is greater than under Alternatives A and B but less than under Alternative C. Therefore, the likelihood that Alternative D would affect recreation is intermediate between Alternatives A and C.

Effects from Transportation and Access Management

Effects Common to All Alternatives

All alternatives would provide access to recreation within the WDO.

Individual Effects under Alternative A

Under Alternative A, roads that are presenting problems to the environment would be improved or decommissioned from the system inventory. Recreational access would thereby either be improved or eliminated in some areas, depending on the management action. Over the long term, recreational use patterns would likely be affected, and the quality of recreation experiences would be maintained through protection of the environment. Alternative A would have the greatest effect on recreation of any of the alternatives.

Individual Effects under Alternative B

Under Alternative B, roads would only be decommissioned from the system inventory if alternative access were provided, thereby eliminating the possibility that recreationists would be precluded from motorized access via road in some areas. However, environmental degradation from roads would continue in some areas, which would diminish the quality of recreational experiences over the long term.

Individual Effects under Alternative C

Management actions and effects on recreation under Alternative C are the same as those described under Alternative B.

Individual Effects under Alternative D

Management actions and effects on recreation under Alternative D are the same as those described under Alternative C.

Effects from Lands and Realty Management

Effects Common to All Alternatives

Public lands would be retained, which would ensure that a variety of recreational settings and opportunities would continue to exist on WDO lands.

Individual Effects under Alternative A

Under Alternative A, management would acquire lands that provide public access for recreation and developed recreation sites. Increased opportunities to access WDO lands would result, as would increased access to developed recreation. Over the long term, the amount of recreational use could increase, and recreational use patterns could be altered.

Individual Effects under Alternative B

Under Alternative B, recreation access and recreation sites would not be given priority for acquisition as much as under Alternative A. Increased recreational opportunities or access could occur as a result of acquisition under this alternative.

Individual Effects under Alternative C

The effects on recreation under Alternative C are slightly greater than those described under Alternative A since management would maximize opportunities to acquire lands with recreation access.

Individual Effects under Alternative D

The effects on recreation under Alternative D are the same as those described under Alternative A.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

Measures to protect valuable and sensitive resources within ACEC designations would create an effect on recreationists throughout the WDO. Visitors to the ACECs could take part in wildlife viewing, sightseeing, hiking, and camping, all while protecting important values within the designation both for current and future generations of recreationists. Conflicts between motorized and nonmotorized recreation users would be minimized in these areas, improving the quality of the recreation experience for all users. Some restrictions on recreation could occur to protect resource values.

Individual Effects under Alternative A

Alternative A would maintain the existing 60-acre Osgood Mountain Milkvetch ACEC, allowing for recreation within the ACEC while protecting its important values. However, no new ACECs would be created, thereby limiting protection of other important areas for future recreationists. Other effects are the same as those discussed under Effects Common to All Alternatives.

Individual Effects under Alternative B

Alternative B would maintain existing ACECs, thereby continuing recreation within the ACECs, while protecting their important values. However, creation of new ACECs would be avoided, thereby limiting protection of other important areas for future recreationists. Other effects are the same as those discussed under Effects Common to All Alternatives.

Individual Effects under Alternative C

Alternative C would designate four ACECs, allowing recreation within the ACECs, while protecting their important values for future recreationists. The Pine Forest SRMA and Pine Forest ACEC have compatible recreation management objectives.

Individual Effects under Alternative D

Management actions and effects on recreation are identical to those described under Alternative C.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

Under all alternatives, designation of backcountry byways creates additional opportunities for scenic drives for recreationists, currently one of the most popular types of dispersed recreation (as identified in Table 3-30). New backcountry byways also could increase visitor use in more remote areas. No discernable difference in impacts would occur for the individual alternatives.

Effects from National Trails Management

Effects Common to All Alternatives

Under all alternatives, maintenance of trails to preserve historic, cultural, and scenic values preserves the array of recreational opportunities available on WDO lands. There would be no difference in impacts for the individual alternatives.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no effects common to all alternatives from wild and scenic river management.

Individual Effects under Alternative A

Under Alternative A, no stream segments are managed as wild and scenic rivers within the WDO; therefore, wild and scenic rivers management under Alternative A would have no impact on recreation and facilities.

Individual Effects under Alternative B

Protecting eligible river segments would maintain an array of recreation experiences, particularly for water-based and primitive recreation under all alternatives. Under Alternative B, approximately 18 miles of the Little Humboldt River would be carried forward for wild and scenic suitability analysis. Management to preserve the outstandingly remarkable values of this stream segment would preserve land- and water-based recreation in the surrounding area.

Individual Effects under Alternative C

The effects of wild and scenic rivers management under Alternative C are the same as those identified under Alternative A.

Individual Effects under Alternative D

The effects of wild and scenic rivers management under Alternative D are the same as those identified under Alternative A.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Under all alternatives, mitigation measures would minimize adverse impacts on wilderness characteristics, thereby helping to ensure that backcountry and primitive settings would continue to be available to recreationists seeking those experiences.

Managing WSAs to maintain wilderness characteristics would provide the opportunity for primitive wilderness recreation until the lands are either designated as wilderness or are released for other recreational uses, such as OHV use. Under all alternatives, the same area would be managed as WSAs, and there would be no difference in the impacts of the individual alternatives.

Individual Effects under Alternative A

Mitigation measures would minimize adverse impacts on wilderness characteristics from multiple use, which would help to ensure that backcountry and primitive experiences would continue to be available to recreationists seeking those experiences.

Individual Effects under Alternative B

The effects on recreation are the same as those described under Alternative A.

Individual Effects under Alternative C

Under Alternative C mitigation measures would minimize adverse impacts on wilderness characteristics, which would help to ensure that backcountry and primitive experiences would continue to be available to recreationists seeking those experiences. Recreation is affected the most under Alternatives C and D, which are the same.

Individual Effects under Alternative D

Alternative D would affect recreation in the same way as under Alternative C.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Developing and maintaining wildlife viewing areas under all alternatives would increase recreational opportunities to view and photograph wildlife.

Individual Effects under Alternative A

In addition to the impacts described under Effects Common to All Alternatives, Alternative B could alter recreational use patterns by increasing the amount of recreation in areas where there is currently little or no recreation.

Individual Effects under Alternative B

The effects from watchable wildlife viewing sites management under Alternative B are the same as those described under Alternative A.

Individual Effects under Alternative C

The effects from watchable wildlife viewing sites management under Alternative C are the same as those described under Effects Common to All Alternatives.

Individual Effects under Alternative D

The effects from watchable wildlife viewing sites management under Alternative D are the same as those described under Alternative A.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

Under all alternatives, management actions to remediate hazardous and solid waste pollution, to control and clean up illegal dumping and littering, and to educate and warn the public about potential hazards would increase the safety of recreational activities on WDO lands. There would be no difference in impacts for the individual alternatives.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no effects common to all alternatives from sustainable development management.

Individual Effects under Alternative A

Alternative A does not address management for sustainable development; therefore, it would have no impact on recreation. No land would be disposed of for this use, so no decrease in land available for recreation would occur.

Individual Effects under Alternative B

Under Alternative B, allowing for the disposal of public lands to facilitate post-operation reuse and to assist the economic development of local communities could decrease the area of public lands available for recreation activities. Sustainable development could reduce recreation access to some areas.

Individual Effects under Alternative C

Under Alternative C, if lands that could be reused for sustainable development could provide a higher public benefit, such as recreation, they would not be subject to disposal. Sustainable development management under Alternative C makes it the least likely of the action alternatives to reduce the amount of land available for recreation in the WDO. However, sustainable development could reduce recreation access to some areas.

Individual Effects under Alternative D

The effects from sustainable development on recreation and facilities under Alternative D are the same as those identified under Alternative B.

Cumulative Effects

Effects of past actions include changes to the landscape as a result of surface-disturbing activities and area closures or restrictions for resource protection. These actions have altered recreational opportunities and use patterns on WDO lands.

All recreation, including OHV use, is expected to increase as population increases. Surface disturbances resulting from forestry, minerals, and grazing activities cumulatively affect recreationists by increasing noise, dust, human presence, structures, and roads. Long-term effects on recreational opportunities, access, and use patterns would occur from land acquisitions and disposals. These effects are expected to increase. Land exchanges directly affect management on those parcels and indirectly affect activities and patterns on surrounding lands. Fuels treatments and wildfire management across ownerships would affect scenic beauty, decreasing it in some areas and increasing it over the long term in others. Preservation of such areas as wilderness, proposed wilderness, Wild and Scenic Rivers, and ACECs would maintain or enhance landscapes and recreational settings and opportunities. Implementing any of the alternatives would result in a variety of cumulative effects on recreational opportunities on WDO lands.

4.3.4 Renewable Energy

Summary

All four alternatives contain actions that would affect the availability of lands for energy development and that could limit the ability to harvest fuels for biomass development. In general, the alternatives with ROW exclusion areas containing the lowest acreage favorable to renewable energy development and with the greatest potential for biomass fuels would have the highest potential for renewable energy development. The amount of land available for disposal out of public ownership would be different for each of the four alternatives and could affect renewable energy development. Although lands that would be disposed of could be used for renewable energy, there is no legal mandate for this use under private or other types of ownership; therefore, renewable energy development could be affected where the land available for disposal also contains renewable energy resources. Disposal probably would result in a lesser effect than ROW exclusion.

Alternative B has the greatest potential for renewable energy development, since there would be no ROW exclusion areas and a relatively high potential for biomass fuels availability. Although Alternative B does not have the lowest acreage available for disposal, it is lower than current conditions (Alternative A). Actions under Alternative C present the least favorable conditions for renewable energy development; Alternative C has more restrictions on fuels treatments and harvest and a relatively high percentage of favorable areas within ROW exclusion areas, even though it has the lowest acreage available for disposal. The potential for renewable energy development under Alternative D would be intermediate between Alternatives B and C. Table 4-53 identifies the indicators that were used to analyze effects on renewable energy under each alternative.

Table 4-53
Summary of Effects on Renewable Energy—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
ROW area available for renewable energy development	No change	No ROW exclusion areas	58,580 acres of biomass, 81,514 acres of CSP, 66,050 acres of PV, and 1,271,778 acres of wind within ROW exclusion areas	54,488 acres of biomass, 78,886 acres of CSP, 0 acres of PV, and 627,240 acres of wind within ROW exclusion areas
Biomass availability from fuel treatments and timber harvesting	No change—limited potential	Highest potential	Lowest potential	Intermediate potential
Lands that could be affected by disposal	No change: 114,380 acres of biomass, 409,465 acres of CSP, 27,202 acres of PV, and 2,989,026 acres of wind within areas available for disposal	Less area for disposal: 113,293 acres of biomass, 196,574 acres of CSP, 1,507 acres of PV, and 2,128,541 acres of wind within areas available for disposal	Least area available for disposal: 57,157 acres of biomass, 164,886 acres of CSP, 42 acres of PV, and 1,215,963 acres of wind within areas available for disposal	Essentially the same area as for Alternative C: 58,628 acres of biomass, 167,409 acres of CSP, 86 acres of PV, and 1,281,958 acres of wind within areas available for disposal

Methods of Analysis

Methods and Assumptions

Renewable energy resources within the WDO, including solar and wind energy and biomass fuels, require a right-of-way to be developed on BLM lands. Management actions could impact renewable energy resources if they resulted in the following changes:

- Directly or indirectly changed the acreage available for ROWs within areas considered favorable for solar power development, within areas with medium or high wind resource potential, or within areas that have biomass development potential;
- Restricted land availability and surface-disturbing activities to protect other resources;
- Affected fuel supply as a result of changes in timber harvesting and fuel treatment activities;
- Resulted in the disposal or exchange of public lands; or
- Caused changes to ROW authorizations.

The assumption is that logging activity and vegetation treatments are directly related to the availability of forest byproducts (wood) that can be used as biomass fuel. Effect determinations are based on the extent to which each alternative would result in these changes.

Effects from Air Quality Management

Effects Common to All Alternatives

Dust abatement requirements for roads could increase the costs of renewable energy development within the WDO under all alternatives.

Individual Effects under Alternative A

The effects from air quality management on renewable resources are the same as under Effects Common to All Alternatives.

Individual Effects under Alternative B

Dust control requirements in excess of those described under Alternative A could increase the costs of renewable energy development for construction of access roads and wind or solar energy storage and generation sites. Therefore, Alternative B would be likely to have a greater effect on the costs of renewable energy development than Alternative A.

Individual Effects under Alternative C

Effects are the same as under Alternative B.

Individual Effects under Alternative D

Effects are the same as under Alternative B.

Effects from Geology Management

Effects Common to All Alternatives

There are no effects common to all alternatives from geologic resource management.

Individual Effects under Alternative A

Geology management under Alternative A would not restrict the development of renewable energy resources.

Individual Effects under Alternative B

Unless renewable energy resources occurred at the sites of unique geologic features, there would be no restrictions on the development of renewable energy resources from geology management under Alternative B. If renewable energy development were desired at the sites of unique geologic features, restrictions on disturbance to protect these resources could preclude development or mitigation measures could be required that would increase the costs of development.

Individual Effects under Alternative C

The effects from geology management under Alternative C are similar to those under Alternative B, except that if renewable energy resources were present at sites of unique geologic features, these

resources would be precluded from development because ROWs would be excluded. Under these circumstances, Alternative C would be the most restrictive of the alternatives.

Individual Effects under Alternative D

The effects from geology management under Alternative D are similar to those under Alternatives B and C. The potential for affecting the development of renewable energy resources under Alternative D would be intermediate between Alternatives B and C.

Effects from Soil Resources Management

Effects Common to All Alternatives

Under all of the alternatives, soil resources management would not reduce the area available for developing renewable energy resources. Costs associated with implementing BMPs and mitigation measures to reduce erosion would increase the costs of renewable energy development.

Individual Effects under Alternative A

The effects of soil resources management under Alternative A would be the same as identified under Effects Common to All Alternatives.

Individual Effects under Alternative B

The effects from soils management under Alternative B would be similar to those described under Alternative A, except that Alternative B would be more likely to increase development costs due to soil salvage, reclamation, and mitigation requirements.

Individual Effects under Alternative C

The area available for renewable energy development would be smaller under Alternative C than under Alternative B, because of potential seasonal closures to eliminate surface disturbance of biological crusts and to reduce compaction. Alternative C, therefore, would be more likely to prevent development of some renewable energy resources or would increase the costs of developing these resources.

Individual Effects under Alternative D

Restrictions to reduce erosion under Alternative D would be intermediate between Alternatives B and C, as would the acreage covered by seasonal restrictions. Therefore, the potential for effects on renewable energy resources development under Alternative D would be intermediate between Alternatives B and C.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from water resources management.

Individual Effects under Alternative A

No effects from water resources management would occur under Alternative A, since no specific management actions have been identified for priority watershed or wellhead protection areas that would restrict renewable energy ROWs.

Individual Effects under Alternative B

Alternative B could restrict development or increase the costs to develop renewable energy resources in wellhead protection areas by managing them as ROW avoidance areas. This level of constraint would be less likely to affect energy resources development than those called for under Alternatives C and D.

Individual Effects under Alternative C

Alternative C would impose the greatest constraints on energy resources development in priority watershed areas and wellhead protection zones by managing them as ROW exclusion areas.

Individual Effects under Alternative D

The ROW restrictions proposed under Alternative D to protect priority watersheds and wellhead protection zones would be intermediate between Alternatives B and C because both priority watersheds and wellhead protection zones would be considered avoidance areas. The effects on energy resources development and costs in priority watershed areas and wellhead protection zones would be intermediate between Alternatives B and C.

Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

Although there is relatively little pinyon juniper within the WDO, all alternatives would provide for mechanical treatments or harvest to achieve stand health and reduce fire danger, which could improve biomass availability for renewable energy development.

Individual Effects under Alternative A

Forest and woodland products management under Alternative A would provide a limited amount of forest byproducts that could be used as biomass. The potential for biomass availability would be enhanced by using harvesting to manage broadleaf woodland habitats, clear cutting to enhance deteriorated stands of aspen and cottonwood, and remedial thinning to protect harvest areas. Biomass availability would be limited by restricting pinyon and juniper harvest to existing areas and preventing harvest in riparian areas.

Individual Effects under Alternative B

Forest and woodland products management under Alternative B has the greatest potential for providing forest byproducts that could be used as biomass; this alternative expands the areas that could be harvested and places the fewest restrictions on harvesting. The potential for biomass availability would be enhanced by the use of mechanical treatments and harvesting to achieve stand health objectives and to reduce fuels, while specifically providing woodland products, expanding

pinyon pine and juniper harvest areas, allowing salvage harvesting of burned stands, and permitting harvesting near riparian areas.

Individual Effects under Alternative C

Forest and woodland products management under Alternative C places the most restrictions on harvesting and has the lowest potential for providing forest and woodland products that could be used as biomass fuels. The potential for biomass availability would be limited by restricting fire suppression, prohibiting pinyon/juniper harvesting for woodland products, green pinyon harvesting, and harvesting near riparian areas, and limiting woodland products harvesting to designated areas. Biomass availability would be enhanced by the use of mechanical treatments and harvesting to achieve stand health objectives.

Individual Effects under Alternative D

The effects of forest and woodland products management under Alternative D are intermediate between Alternatives B and C with respect to availability of forest and woodland products as biomass fuels. The potential for biomass availability would be enhanced by the use of mechanical treatments to achieve stand health objectives and to reduce fuels, while specifically providing temporary woodland products harvesting areas, expanding juniper harvest areas, allowing salvage harvesting of burned stands, permitting commercial harvesting on a case-by-case basis, allowing limited harvesting near riparian areas when trees are identified for selective removal to meet resource objectives, and allowing the limited harvest of green pinyon for the same reason.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Weed control measures under all alternatives could increase biomass availability for renewable energy development and reduce the risk of wildland fire, which otherwise could limit the availability of biomass fuels. Measures to limit the spread of weeds during road maintenance and other authorized activities could increase the cost of solar and wind power development.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

Under all of the alternatives, chemical and biological controls may reduce the amount of biomass available for use as a renewable energy resource. Biomass often is released for use because it has been infested by pests, and the proposed chemical and biological controls are designed to reduce pests.

Individual Effects under Alternative A

The effects from chemical and biological controls are the same as under Effects Common to All Alternatives.

Individual Effects under Alternative B

The use of integrated pest management under Alternative B could offset losses of biomass discussed under Effects Common to All Alternatives, above, through integrated pest management techniques that include mechanical control.

Individual Effects under Alternative C

Effects are the same as under Alternative B.

Individual Effects under Alternative D

Effects are the same as under Alternative B.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

The use of mechanical management tools to restore and improve rangeland could make biomass available for use as a renewable energy resource.

Individual Effects under Alternative A

In addition to the Effects Common to All Alternatives, the use of prescriptive grazing could reduce the wildfire fuel load, preserving biomass that could later be used for renewable energy.

Individual Effects under Alternative B

Effects are the same as under Alternative A.

Individual Effects under Alternative C

Option 1

Effects are the same as under Alternative A.

Option 2

Eliminating grazing as a tool for rangeland management could allow woodlands to expand, thus increasing the availability of biomass. However, fuel loads would remain high in most of the WDO, increasing the risk of catastrophic fire, which would decrease the availability of biomass.

Individual Effects under Alternative D

Effects are the same as under Alternative A.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Under all alternatives, removing juniper trees from riparian areas would provide biomass that could be used for renewable energy in the short term.

Individual Effects under Alternative A

Effects are the same as under Effects Common to All Alternatives.

Individual Effects under Alternative B

Juniper removal under Alternative B would have the same effect on renewable energy as described under Effects Common to All Alternatives. The potential for closing or relocating routes to protect riparian areas could limit the development of renewable energy resources where these types of routes would be required. In addition, if BMPs for ROWs resulted in restrictions on ROWs or increased costs for using ROWs, renewable energy resource development in these areas would be further limited.

Individual Effects under Alternative C

Effects are the same as under Alternative B.

Individual Effects under Alternative D

Effects are the same as under Alternative B.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Under all alternatives, use restrictions to maintain or improve wildlife habitat could eliminate some areas from possible renewable energy resource development.

Individual Effects under Alternative A

The effects of use restrictions under Alternative A would be the same as those identified under Effects Common to All Alternatives; however, flexible restrictions on stream bank alterations and maintaining access to streams while avoiding erosion also could retain access for renewable energy uses.

Individual Effects under Alternative B

Alternative B would have the lowest potential to adversely affect ROWs for renewable energy development. It would maintain multiple uses, would not require restrictions on surface disturbance to protect migratory birds, and would allow surface-disturbing activities such as ROWs and access roads for renewable energy development.

Individual Effects under Alternative C

Of the action alternatives, Alternative C has the greatest potential to affect renewable energy development. Alternative C would require restrictions on surface disturbance to protect migratory birds, thus limiting surface-disturbing activities, including ROWs and access roads for renewable energy development.

Individual Effects under Alternative D

Effects on renewable energy development under Alternative D are intermediate between Alternatives B and C. Alternative D designates an intermediate level of use restrictions to protect wildlife and wildlife habitat, while allowing for multiple uses where conditions are appropriate. This could allow for more renewable energy ROWs and access roads than under Alternative C but fewer than under Alternative B.

Effects from Special Status Species Management

Effects Common to All Alternatives

Under all alternatives, use and surface disturbance restrictions to protect sensitive species would place limitations on renewable energy development. ROW restrictions could reduce the opportunities for renewable energy development.

Individual Effects under Alternative A

The effects on renewable resources from special status species management under Alternative A would be the same as those described under Effects Common to All Alternatives.

Individual Effects under Alternative B

Under Alternative B, the increased flexibility in applying use and surface disturbance restrictions to protect sensitive species decreases the likelihood that these restrictions would affect availability of ROWs for renewable energy development, as compared with current conditions.

Individual Effects under Alternative C

Under Alternative C, the decreased flexibility in applying use and surface disturbance restrictions to protect sensitive species increases the likelihood that these restrictions would reduce the availability of ROWs for renewable energy development, as compared with current conditions.

Individual Effects under Alternative D

The effects from special status species management under Alternative D would be the same as those described under Alternative B.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Protection measures for WHB would prohibit or limit certain activities in HMAs. SOPs, mitigation measures, and seasonal closures could increase the costs of developing renewable resources in HMAs. Protection measures could limit forest treatments in certain areas, which in turn could limit the availability of biomass in these areas.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Under all alternatives, fuels treatment strategies can provide biomass for renewable energy when mechanical treatments are used to remove excess vegetation.

Individual Effects under Alternative A

The effects from wildland fire management on renewable resources would be the same as those identified under Effects Common to All Alternatives.

Individual Effects under Alternative B

Under Alternative B, implementing new approaches to fuels management could encourage the development of new biomass resources.

Individual Effects under Alternative C

The effects from wildland fire management under Alternative C are the same as those identified under Alternative B. In addition, fire breaks would protect renewable energy infrastructure.

Individual Effects under Alternative D

The effects from wildland fire management under Alternative D are the same as those identified under Alternative B.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Under all alternatives, protection of cultural resources could increase the costs of or preclude renewable energy development. Rerouting ROWs to avoid cultural resources could increase the costs of distributing renewable energy. Class I sections of the CNHT would be excluded from such ROWs.

Individual Effects under Alternative A

Prohibiting commercial wood product harvest in the Stillwater Range to protect Native American values could reduce the amount of biomass that could be harvested for renewable energy.

Individual Effects under Alternative B

Permitting commercial wood product harvest in the Stillwater Range could provide additional biomass for renewable energy use.

Individual Effects under Alternative C

The effects from cultural resources management under Alternative C would be the same as those described under Alternative A.

Individual Effects under Alternative D

The effects from cultural resources management under Alternative D would be the same as those described under Alternative A.

Effects from Tribal Consultation

Effects Common to All Alternatives

There are no effects common to all alternatives from tribal consultation.

Individual Effects under Alternative A

Alternative A would not impose development stipulations, use restrictions, or closures to protect tribal sites and would be the least likely to affect ROWs for renewable energy development.

Individual Effects under Alternative B

Alternative B would have a higher potential for effects on renewable energy resources than Alternative A because it provides for stipulations and use restrictions to protect tribal sites, which could restrict ROWs for renewable energy development. Alternative B would be less likely to affect renewable energy resources than Alternatives C and D.

Individual Effects under Alternative C

Alternative C would have a higher potential for effects on renewable energy resources than Alternatives A and B. A greater level of restriction to protect tribal sites would be imposed under Alternative C, which could further restrict the availability of ROWs for renewable energy resource development.

Individual Effects under Alternative D

The effects on renewable energy from tribal consultation under Alternative D would be the same as those described under Alternative C.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

Under all alternatives, restrictions to public access for the protection of paleontological resources could restrict the establishment of new renewable energy ROWs.

Individual Effects under Alternative A

Alternative A would have the fewest restrictions to public access for the protection of paleontological resources. Authorization for surface-disturbing activities that might damage paleontological resources would not be required; therefore, Alternative A would be the least likely to limit ROWs and access to renewable energy resources.

Individual Effects under Alternative B

The effects on renewable energy resources from paleontological resources management under Alternative B would be similar to those identified under Alternative A, except that authorization for surface-disturbing activities would be required to protect paleontological resources. Therefore, the potential effects on the development of renewable energy resources under Alternative B would be greater than under Alternative A but less than under Alternatives C and D.

Individual Effects under Alternative C

Under Alternative C, implementing such actions as mineral withdrawal and closure of public access to protect vulnerable paleontological deposits could affect the level of renewable energy development that could occur in these areas.

Individual Effects under Alternative D

The effects on renewable energy from paleontological resources management under Alternative D are the same as those described under Alternative C.

Effects from Visual Resources Management

Effects Common to All Alternatives

Under all alternatives, managing land as VRM Class I or II could restrict the establishment of new renewable energy ROWs.

Individual Effects under Alternative A

Under Alternative A, managing 766,573 acres as VRM Class I and II could limit renewable energy resource development by restricting ROWs.

Individual Effects under Alternative B

Alternative B would manage 808,808 acres as VRM Class I and II. This alternative would be the least likely to affect renewable energy resource development, since the fewest acres would have restrictions based on VRM Class I and II guidelines.

Individual Effects under Alternative C

Alternative C has the most acreage to be managed as VRM Class I and II (3,500,816 acres); therefore, this alternative would place the most restrictions on renewable energy resource development based on VRM Class I and II guidelines.

Individual Effects under Alternative D

Under Alternative D, 3,198,021 acres would be managed as VRM Class I and II, which is a greater area that could be restricted for renewable energy development than Alternatives A and B but less than Alternative C.

Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from cave and karst resource management.

Individual Effects under Alternative A

Cave and karst resources management under Alternative A would restrict the development of renewable energy resources.

Individual Effects under Alternative B

Unless renewable energy resources occurred at the sites of caves and karst features, there would be no restrictions resulting from cave and karst management on the development of renewable energy resources under Alternative B. If renewable energy development were desired at the sites of caves and karst features, mitigation measures to protect these resources could increase the costs of development.

Individual Effects under Alternative C

Cave and karst management under Alternative C would be the most restrictive on renewable energy development near these features, since surface disturbance would be precluded within 500 feet of caves and karst features.

Individual Effects under Alternative D

Alternative D is more restrictive of renewable energy development activities in the vicinity of cave and karst resources than Alternatives A and B but less restrictive than Alternative C.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Livestock grazing management would not impact renewable resources under all alternatives, since no restrictions on renewable energy ROWs or access to renewable resources are proposed. No constraints on the construction of accessways to develop renewable resources are identified.

Effects from Minerals Management

Effects Common to All Alternatives

Minerals management under all alternatives would not affect ROWs for renewable energy; however, surface occupancy by mining operations of areas with renewable energy potential would restrict the availability of these areas for development.

Individual Effects under Alternative A

Alternative A would have the most area open to all types of minerals operations, so surface use by these operations would be most likely to affect the access to renewable energy resources. Approximately 4,020 acres with high biomass potential, 1,359 acres with high solar potential, and

29,582 acres with high wind potential would be within areas open to surface occupancy by minerals operations.

Individual Effects under Alternative B

The effects of minerals management on renewable energy under Alternative B would be similar to those described under Alternative A, except that fewer acres would be open for surface occupancy by minerals operations. There would be a lower potential under Alternative B for minerals operations to affect access to renewable energy resources than under Alternative A; however, due to the locations of the areas open to minerals activities, approximately the same acreage of high renewable energy potential would be affected as under Alternative A.

Individual Effects under Alternative C

The effects of minerals management on renewable energy under Alternative B would be similar to those described under Alternative A, except that the fewest acres would be open for surface occupancy by minerals operations. Therefore, minerals operations under Alternative C would be the least likely to affect access to renewable energy resources; however, due to the locations of the areas open to minerals activities, a similar acreage of high renewable energy potential would be affected as under Alternative A.

Individual Effects under Alternative D

The potential for effects on renewable energy resources under Alternative D would be intermediate between Alternatives B and C, since Alternative D would have fewer acres open to mining than under Alternative B but more than under Alternative C. However, due to the locations of the areas open to minerals activities, approximately the same acreage of high renewable energy potential would be affected as under Alternative A.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There are no effects common to all alternatives from recreation, visitor outreach, and services management.

Individual Effects under Alternative A

There are no restrictions to the amount of land open to renewable resource activities or limits to renewable resource development based on recreation, visitor outreach, and services management objectives or actions under Alternative A.

Individual Effects under Alternative B

Under Alternative B, the development of renewable energy resources would be restricted from those areas identified for avoidance or exclusion of ROWs associated with specific RMZs.

Individual Effects under Alternative C

The effects from recreation, visitor outreach, and services management under Alternative C would be similar to those described under Alternative B.

Individual Effects under Alternative D

The effects from recreation, visitor outreach, and services management under Alternative D would be similar to those described under Alternative B.

Effects from Renewable Energy Management

Effects Common to All Alternatives

All alternatives would provide public lands for renewable energy development, process ROWs for wind energy development for project areas and wind monitoring and testing sites, lease public lands for wind energy development, and authorize ROWs. The BLM also would provide leases or ROWs for biomass and solar energy development under all alternatives.

Individual Effects under Alternative A

Maintaining existing exclusion areas could limit the area available for renewable energy development.

Individual Effects under Alternative B

No acreage is specifically identified for ROW exclusion, which would maximize the area available for renewable energy development.

Individual Effects under Alternative C

Approximately 1,279,481 acres are specifically identified for ROW exclusion. Within this area are 81,514 acres of BLM lands identified as favorable for developing CSP systems, 42 acres of BLM lands suitable for PV development, 1,271,778 acres of lands favorable to wind energy development, and 58,580 acres of land favorable for biomass fuels.

Individual Effects under Alternative D

Approximately 699,929 acres are specifically identified for ROW exclusion. Within this area are 78,866 acres of BLM lands identified as favorable for developing CSP systems, no BLM lands suitable for PV development, 627,640 acres of BLM lands identified as favorable for wind energy development, and 54,488 acres of land favorable for biomass fuels.

Effects from Transportation and Access Management

Effects Common to All Alternatives

All alternatives would continue to provide access throughout the WDO, which would maintain access to areas with renewable energy resource potential. However, limitations on access to protect other resources could constrain or increase the costs of renewable energy development.

Individual Effects under Alternative A

Decommissioning roads that are having negative environmental effects and protecting habitat and sensitive species could remove access to areas with high renewable energy resource potential, which could limit the development of these resources.

Individual Effects under Alternative B

Allowing for public input in decommissioning roads to protect habitat and sensitive species could minimize the removal of or the effects of removal of access to areas with high renewable energy resource potential. This would minimize the effects on the development of these resources.

Individual Effects under Alternative C

The effects of transportation and access management under Alternative C are the same as those described under Alternative A.

Individual Effects under Alternative D

The effects of transportation and access management under Alternative D are the same as those described under Alternative A.

Effects from Lands and Realty Management

Effects Common to All Alternatives

Land tenure adjustments and right-of-way avoidance and exclusion areas could affect the establishment of new ROWs for the development of renewable energy resources.

Individual Effects under Alternative A

Under Alternative A, approximately 409,465 acres of BLM land identified as favorable for developing CSP systems is within land tenure Zone 3, with lands suitable for possible disposal, and about 27,202 of BLM land suitable for PV development is within this zone. Of the BLM lands favorable for wind power development, 2,989,026 acres are in Zone 3. Approximately 114,380 acres of land favorable for biomass fuels are within Zone 3.

The effects of exclusion areas on renewable energy are described above under Effects from Renewable Energy Management.

Individual Effects under Alternative B

Under Alternative B, approximately 196,574 acres of BLM land identified as favorable for developing CSP systems is within the area identified as available for disposal, and about 1,507 acres of BLM land suitable for PV development is within this area. Of the BLM lands favorable for wind power development, 2,128,541 acres are available for disposal. Approximately 113,293 percent of lands favorable for biomass fuels would be available for disposal.

The effects of exclusion areas on renewable energy are described above under Effects from Renewable Energy Management.

Individual Effects under Alternative C

Under Alternative C, approximately 164,886 acres of BLM land identified as favorable for developing CSP systems is within the area identified as available for disposal, and about 42 acres of BLM land suitable for PV development is within this area. Of the BLM lands favorable for wind power development, 1,215,963 acres are available for disposal. Approximately 57,157 acres of lands favorable for biomass fuels is available for disposal.

The effects of exclusion areas on renewable energy are described above under Effects from Renewable Energy Management.

Individual Effects under Alternative D

Under Alternative D, approximately 167,409 acres of BLM land identified as favorable for developing CSP systems is within the area identified as available for disposal; about 86 acres of BLM land suitable for PV development is within this area. Of the BLM lands favorable for wind power development, 1,281,958 acres are available for disposal. Approximately 58,628 acres of land favorable for biomass fuels is available for disposal.

The effects of exclusion areas on renewable energy are described above under Effects from Renewable Energy Management.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

ACECs require special management to protect a particular resource, which could curtail establishing new renewable energy ROWs in areas designated as ACECs or could increase the costs to develop and operate renewable energy sites. However, no specific measures to impose restrictions on renewable resources have been identified under any of the alternatives.

Individual Effects under Alternative A

Under Alternative A, renewable energy ROWs would not be allowed only in the 55-acre Osgood Mountain Milkvetch ACEC.

Individual Effects under Alternative B

Similar to Alternative A, the Osgood Mountain Milkvetch ACEC also would be designated under Alternative B, but wind energy development would be allowed within its boundaries. Limiting the creation of additional ACECs also could preserve the area that is available to renewable energy development, so Alternative B is the least likely to affect renewable energy ROWs.

Individual Effects under Alternative C

An additional 97,816 acres of ACECs would be designated under Alternative C, as compared to Alternative A. Approximately, 2,705 acres of high wind energy potential falls within the Pine Forest ACEC exclusion area. In addition, there is a small area of wind power potential within the Stillwater ACEC and near the Osgood Mountain Milkvetch ACEC, so Alternative C is more likely to affect renewable energy ROWs than Alternative A. However, the low percentage of lands with renewable

energy resources in or adjacent to ACECs is too small for the ACEC designation to have much effect on these resources. No limit was placed on the creation of new ACECs, which could affect the establishment of new renewable energy ROWs.

Individual Effects under Alternative D

The acreage of ACEC/RNA designation under Alternative D is the same as that identified under Alternative C; however, renewable energy ROWs would not be excluded within the Pine Forest ACEC. The same 2,705 acres would be within the Pine Forest ACEC avoidance area, which would require evaluation for incompatible uses and could limit renewable energy ROWs. Therefore, Alternative D would have an effect on renewable energy resources between that of Alternative A and that of Alternative C.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

The management of backcountry byways under all alternatives would not affect renewable energy resources because it would not curtail the establishment of renewable energy ROWs, prohibit access to renewable resources, or restrict construction measures that might be required to develop these resources.

Effects from National Trails Management

Effects Common to All Alternatives

Rerouting renewable energy ROWs to avoid crossing Class I sections of the CNHT could increase the costs of renewable energy development under all alternatives. There would be no difference in the avoidance of crossing Class I sections of the CNHT for the individual alternatives and therefore, nor differences in the potential for increasing costs.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

Wild and scenic rivers management under all alternatives would not affect renewable energy resources because it does not curtail the establishment of renewable resource ROWs, prevent access to renewable resources, or restrict construction measures that might be required to develop these resources.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

No specific management actions identified for wilderness study areas management would occur under any of the alternatives that would affect renewable resource ROWs or prevent access to renewable resources. Therefore, this management action would have no renewable resource effects.

Under all alternatives, protecting wilderness characteristics could constrain the establishment of new ROWs for renewable energy and could limit access to renewable resources.

Individual Effects under Alternative A

Applying use restrictions on a case-by-case basis to protect wilderness characteristics could limit the level of renewable energy resource development, and mitigation measures required to minimize effects on wilderness characteristics could increase the costs to develop renewable energy resources.

Individual Effects under Alternative B

Alternative B would not apply use restrictions to protect wilderness characteristics and would be the least likely alternative to restrict renewable energy resource development; however, mitigation measures would increase the costs to develop renewable energy resources in a manner similar to that described under Alternative A.

Individual Effects under Alternative C

Alternative C would apply both use restrictions and mitigation measures to reduce effects on wilderness characteristics. This could be more restrictive on the development of renewable energy resources than Alternatives A and B.

Individual Effects under Alternative D

The both use restrictions and mitigation measures associated with wilderness characteristics management under Alternative D would be the same as those described under Alternative C resulting in the same level of restrictions on the development of renewable energy.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Under all of the alternatives, the establishment of watchable wildlife viewing sites would not affect the access to renewable resources, the establishment of renewable energy ROWs, or renewable energy resource development. Therefore, renewable resource development would not be affected by watchable wildlife viewing sites management.

Effects from Public Health and Safety—Management

Effects Common to All Alternatives

Under all alternatives, constraining public activities on public lands could restrict access to renewable resources and prevent the establishment of renewable energy ROWs; requirements for fencing, signing, and other actions to protect public safety could increase the costs of renewable energy development.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no effects common to all alternatives from sustainable development management.

Individual Effects under Alternative A

Sustainable development is not addressed under Alternative A; therefore, Alternative A would not affect renewable resources.

Individual Effects under Alternative B

The effects of allowing disposal for reuse could increase renewable energy development. For example, equipment and infrastructure left on site by mining operations, such as generators and connections to the power grid, could be used to produce renewable energy.

Individual Effects under Alternative C

The effects from sustainable development management on renewable energy under Alternative C are the same as those described under Alternative B.

Individual Effects under Alternative D

The effects from sustainable development management on renewable energy under Alternative D are the same as those described under Alternative B.

Cumulative Effects

Past and current studies and policies have influenced the development of renewable energy on public lands, including the publication of *Assessing the Potential for Renewable Energy on Public Lands* (BLM and DOE 2003), *Programmatic EIS on Wind Energy Development on BLM-Administered Lands in the Western United States* (BLM 2004b), the National Energy Policy, and the following BLM Instruction Memoranda:

- IM 2004-227, Bureau of Land Management's Biomass Utilization Strategy, which established the BLM Biomass Utilization Strategy;
- IM 2005-160 BLM Biomass Utilization Strategy, which established comprehensive definitions for biomass and biomass utilization, established performance measures and guidelines for counting and tracking biomass accomplishments, and implements the DOI contract clause for biomass removal;
- IM 2005-006, Right-of-Way Management, Use Authorization, Facilities Management, which established the policy for processing right-of-way applications for solar energy development projects on public lands administered by the BLM; and
- IM 2006-216, Wind Energy Development Policy, which provided guidance on implementing the Record of Decision for the Programmatic Environmental Impact Statement on Wind Energy Development and guidance on processing right-of-way applications for wind energy projects on public lands administered by the BLM.

Past events, including wildland fires, fuel treatments, cyclic insect and disease activity, and timber harvests, have affected the availability of biomass fuels. As energy prices rise, alternative sources of fuel become more economical to develop. The increased demand for both green energy and energy produced within the United States influences and is likely to continue to affect the rate at which renewable energy is developed. Alternative A would not change the availability of energy ROWs

within the WDO or of potential biomass fuels and would not have a cumulative effect on renewable energy in the WDO. Alternatives B and D are most likely to increase the availability of renewable energy and cumulatively affect renewable energy in the WDO. Alternative C, in combination with other projects and events, could increase the pressure to develop renewable energy in other areas due to the acreage of exclusion areas.

4.3.5 Transportation and Access

Summary

The primary cause of effects on or changes to the transportation network is resource protection. Measures that are implemented to protect natural resources, such as wildlife, water, and soil, and to protect cultural resources could result in seasonal or permanent route restrictions or closures. Permitted activities on BLM-administered lands, such as those related to forestry and minerals, could expand the route network.

Methods of Analysis

Methods and Assumptions

Potential impacts on transportation and travel from each alternative are based on interdisciplinary team knowledge of the resources and planning principles. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- The demand for recreational use would continue to increase over the life of the plan;
- Recreational visits would continue to increase;
- The incidence of resource damage and conflicts among recreationists involved in mechanized, motorized, and nonmotorized activities would increase with increasing use of public lands;
- Anticipated increases would focus on OHV use and on fishing, hiking, mountain biking, camping, motorboating, photographing, bird and wildlife observing, picnicking, and hunting;
- User-created trails could continue to be developed throughout the WDO, even though such actions are illegal, and creators and users of nondesignated trails would be subject to enforcement actions; and
- Implementing the travel management plan would include increased public education, signing, enforcement, and resource monitoring in regard to travel management.

Effects from Air Quality Management

Effects Common to All Alternatives

Certain transportation-related construction and maintenance activities may be restricted if air quality impacts cannot be minimized by implementing best management practices or offset by mitigation measures.

Effects from Geology Management

Effects Common to All Alternatives

There are no effects common to all alternatives from geologic resource management.

Individual Effects under Alternative A

Impacts on transportation and access management are not likely to occur under Alternative A.

Individual Effects under Alternative B

OHV use within unique geologic resource areas would be limited to roads and trails to protect geologic resources.

Individual Effects under Alternative C

Effects would be greatest under Alternative C due to the closure of roads and trails to OHV use for protection of geologic resources.

Individual Effects under Alternative D

Effects are the same as those described under Alternative B.

Effects from Soil Resources Management

Effects Common to All Alternatives

Wind erosion can have a major direct impact on public safety and transportation corridors because burned areas are near or surround transportation corridors, such as Interstate 80 and State Highways 95 and 140. Windblown soil has resulted in temporary closures of the Interstate and highways, which has affected interstate commerce. Soil management, such as erosion control techniques, would reduce the potential for wind erosion of soils from burned areas.

Individual Effects under Alternative A

Effects are the same as those described under Effects Common to All Alternatives.

Individual Effects under Alternative B

Effects are the same as those described under Effects Common to All Alternatives.

Individual Effects under Alternative C

OHV travel and certain transportation-related construction and maintenance activities could be restricted if soil impacts could not be minimized by implementing best management practices or if they could not be offset by mitigation measures.

Individual Effects under Alternative D

Effects are the same as those described under Alternative C.

Effects from Water Resources Management

Effects Common to All Alternatives

Certain transportation-related construction and maintenance activities could be restricted if water quality standards could not be attained by implementing best management practices.

Effects from Vegetation—Forest /Woodland Products Management

Effects Common to All Alternatives

There are no effects common to all alternatives from vegetation-forest/woodland management.

Individual Effects under Alternative A

Impacts on transportation and access management are not likely to occur under Alternative A.

Individual Effects under Alternative B

Direct effects from commercial harvesting of firewood, posts, and Christmas trees could include an increase in forestry-related traffic on routes within the WDO. Long-term direct effects include an increase in the number of routes accessible on public lands through the establishment of new logging roads. This would indirectly affect opportunities for both motorized and nonmotorized users overall by increasing road density in the WDO.

Individual Effects under Alternative C

Certain transportation-related construction and maintenance activities could be restricted in designated old growth forests if impacts could not be minimized by implementing best management practices or if they could not be offset by mitigation measures.

Individual Effects under Alternative D

Effects could be similar to those described under Alternative B but are expected to be less since commercial harvesting would be authorized only on a case-by case basis to achieve resource objectives. In addition, effects from designating old growth forests are the same as those described under Alternative C.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There are no effects common to all alternatives from vegetation-riparian and wetlands management.

Individual Effects under Alternative A

Impacts on transportation and access management are not likely to occur under Alternative A.

Individual Effects under Alternative B

Measures implemented to protect riparian and wetland areas could directly affect transportation and travel management if routes are relocated or closed to protect sensitive resources. Effects would be short or long term depending on if the route were temporarily or permanently restricted. Closures for resource protection could result in an overall net decrease of available BLM-administered routes in the planning area.

Individual Effects under Alternative C

Effects are the same as those described under Alternative B.

Individual Effects under Alternative D

Effects are the same as those described under Alternative B.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There are no effects common to all alternatives from fish and wildlife management.

Individual Effects under Alternative A

Impacts on transportation and access management are not likely to occur under Alternative A.

Individual Effects under Alternative B

Measures implemented to protect aquatic and riparian habitat could directly affect transportation and travel management if routes were removed to preserve sensitive resources. Road removal for resource protection could result in an overall net decrease of available BLM-administered routes in the planning area.

Individual Effects under Alternative C

Effects are the same as those under Alternative B. In addition, transportation construction and maintenance activities may be directly affected by seasonal prohibition of surface activities during migratory bird peak breeding season.

Individual Effects under Alternative D

Effects are the same as those described under Alternative B.

Effects from Special Status Species Management

Effects Common to All Alternatives

Special status species management could directly affect transportation and travel management if routes are closed to protect sensitive resources. Effects would be short or long term depending on if the route is temporarily or permanently restricted. Closures for resource protection could result in an overall net decrease of available BLM-administered routes in the planning area. Planning of future transportation routes could be directly affected by the presence of special status species and their habitat due to avoidance and buffer zone considerations.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Route restrictions and closures could occur during wildland fire management activities, directly affecting transportation and travel management. Short-term effects could include an increase in fire management equipment traffic on BLM-administered routes, an increase in motorized vehicle traffic on routes that remain accessible until fire management activities stop, and an increase in motorized and nonmotorized conflicts on the remaining accessible routes.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Under all alternatives, protective measures for cultural resources would affect transportation and travel management when restrictions are implemented to protect cultural values at specific sites. Restrictions on roads could directly affect visitors by limiting accessibility to some sites and could result in an overall reduction in available routes.

Effects from Tribal Consultation

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

Protective measures for paleontological resources could affect transportation and travel management if restrictions are implemented to protect identified paleontological resources at specific sites. Restrictions on roads could directly affect visitors by limiting accessibility to some sites and could result in an overall reduction in routes available to access public lands.

Effects from Visual Resources Management

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Grazing management could directly affect transportation and travel management by adjusting current use and by altering routes. Short-term effects include increased use of the route network for livestock grazing management purposes, such as maintaining livestock developments. New routes established for livestock grazing management could increase overall route density on BLM-administered lands, thereby expanding the route network.

Effects from Minerals Management

Effects Common to All Alternatives

Minerals management, including heavy equipment and truck traffic on the network of routes within the WDO planning area, would directly affect transportation and travel management. Most effects would be relatively short term and would occur only during mineral development activities. New routes established for mineral development could also increase overall route density on BLM-administered lands, thereby expanding the route network.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Updating the Transportation Plan through subsequent implementation-level plans could result in changes to route designations, which could affect routes available to motorized travel within the WDO. Access could be increased or decreased in areas, depending on the designations made. New routes could also be established, which could expand areas available to motorized travel..

Individual Effects under Alternative A

Alternative A would provide the greatest opportunity for OHV travel of all alternatives. Most of the WDO (6,782,790 acres) would be open to OHV use, with minimal limited (416,652 acres) and closed (24,832 acres) designated areas.

Individual Effects under Alternative B

Increased visitation due to new recreational facilities would increase the use of roads and trails and would increase the demand for new travel routes. Managing new SRMAs could constrain or restrict public access in certain recreation management zones (RMZs) within the SRMAs or could enhance or encourage greater public access in other RMZs. Impacts would be local.

Under Alternative B, 1,460,200 acres would be open to OHV use, 5,445,218 acres would be limited to OHV use, and 24,832 acres would be closed to OHV use; this alternative would allow the most OHV travel of the RMP alternatives.

Individual Effects under Alternative C

Effects from general recreation use and designation of new SRMAs are the same as those described under Alternative B. OHV travel would be the most restricted under Alternative C, with 61,427 acres closed, 7,143,177 acres limited, and no acres open to OHV use.

Individual Effects under Alternative D

Effects from general recreation use and designation of new SRMAs are the same as those described under Alternative B. Under Alternative D, 289,932 acres would be open to OHV use, 6,878,592 acres would be limited, and 35,483 acres would be closed to OHV use.

Effects from Renewable Energy Management

Effects Common to All Alternatives

Renewable energy management, including heavy equipment and truck traffic on the network of routes within the WDO planning area, would directly affect transportation and travel management. Most effects would be relatively short term and would occur only during renewable energy development activities. New routes established for renewable energy development could also increase overall route density on BLM-administered lands, thereby expanding the route network.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Reducing erosion and sedimentation damage through maintenance and design criteria would facilitate the long-term use of access routes by minimizing deterioration of these routes and the impact on surrounding resources.

Obtaining easements from private land owners for current and new BLM system roads could enhance access to public lands within the WDO.

Avoiding duplicate roads that have common destinations may result in heavier traffic on individual routes. In addition, access would be limited to some areas if a particular route were closed and no alternative route existed; the extent of impact would vary by the destinations served by the routes and by the duration of the closure.

Individual Effects under Alternative A

Decommissioning roads that are adversely affecting the environment may limit access to some areas of the WDO.

Individual Effects under Alternative B

Constructing roads while avoiding creating fragmented resource tracts may affect the location of routes, limiting access in some areas.

Installing directional signs would enhance travel within the WDO, particularly for recreational use, by indicating proper direction to destinations. In addition to minimizing the potential for visitors to become lost, signage would help direct traffic to main travel routes and would reduce the accidental use of roads that may not be suitable for all types of travel.

Individual Effects under Alternative C

Decommissioning, removing, or rerouting roads or trails that are adversely affecting the environment may limit access to some areas of the WDO. Constructing roads while avoiding creating fragmented resource tracts may affect the location of routes, limiting access in some areas. Effects from implementing a signage plan are the same as those described under Alternative B.

Individual Effects under Alternative D

Effects are similar to those described under Alternative C.

Effects from Lands and Realty Management

Effects Common to All Alternatives

Land acquisitions could increase the overall route network and expand both motorized and nonmotorized opportunities.

Individual Effects under Alternative A

Effects under Alternative A are the same as those described under Effects Common to All Alternatives.

Individual Effects under Alternative B

Designating 716,528 acres as avoidance areas to protect resources could affect future route planning in and through these areas, although the impact on route planning would be limited. This is because resource impacts from the granting of ROWs would not be completely prohibited but would require mitigation.

Individual Effects under Alternative C

Designating 869,645 acres as avoidance areas for granting ROWs would have the same effects as those described under Alternative B. In addition, 1,279,481 acres would be designated as exclusion areas for granting ROWs in order to protect priority wildlife areas; this would limit route planning and could restrict access to some areas for certain uses.

Individual Effects under Alternative D

Designating 1,325,967 acres as avoidance areas for granting ROWs would have the same effects as those described under Alternative B. Designating 699,929 acres as exclusion areas for granting ROWs would have the same effects as those described under Alternative C.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

There are no effects common to all alternatives from ACEC/RNA management.

Individual Effects under Alternative A

Impacts on transportation and access management are not likely to occur under Alternative A.

Individual Effects under Alternative B

Impacts on transportation and access management are not likely to occur under Alternative B.

Individual Effects under Alternative C

Impacts due to travel restrictions in ACECs may increase with the designation of three new ACECs.

Individual Effects under Alternative D

Effects are the same as those described under Alternative C.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

Developing new BCBs could enhance travel and could add new access routes within the WDO.

Effects from National Trails Management

Effects Common to All Alternatives

There are no effects common to all alternatives from National Trails management.

Individual Effects under Alternative A

Impacts on transportation and access management are not likely to occur under Alternative A.

Individual Effects under Alternative B

Impacts on transportation and access management are not likely to occur under Alternative B.

Individual Effects under Alternative C

Class I segments of National Historic Trails would be closed to OHV use. Class II, III, IV, and V sections would be designated as limited for OHV use.

Individual Effects under Alternative D

Effects are the same as those described under Alternative C.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

If Congress releases 13 WSAs, and the WSAs are managed for uses other than wilderness, new access routes could be needed within these areas.

Individual Effects under Alternative A

Effects under Alternative A are the same as those described under Effects Common to All Alternatives.

Individual Effects under Alternative B

Managing 220,074 acres to protect wilderness characteristics could limit route planning and could restrict access to some areas.

Individual Effects under Alternative C

Effects are the same as those described under Alternative B.

Individual Effects under Alternative D

Effects are the same as those described under Alternative B.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Developing new wildlife viewing sites could enhance travel and could add new access routes within the WDO.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

Impacts on transportation and access management are not likely to occur under all alternatives.

Effects from Sustainable Development Management

Effects Common to All Alternatives

Issuance of ROWs to support the reuse of public lands could add new access routes within the WDO.

Cumulative Effects

Historically, the scattered and fragmented lands that dominate the WDO planning area and the areas of rough terrain have been a physical constraint affecting OHV use in the planning area. Past actions such as mineral exploration and development, livestock grazing, forestry practices, and changes to management on lands surrounding the WDO also have contributed to effects on transportation and travel management.

Most past activities are anticipated to continue at a similar or increased level in the foreseeable future. Surface-disturbing activities may contribute to route restrictions and alterations as some areas and existing routes and trails become more heavily traveled; in addition, nonmotorized opportunities may be reduced as more development occurs. New routes could increase access to remote areas that were previously inaccessible by motorized vehicles. Accessibility to BLM-administered lands may change as land acquisitions and disposals continue.

Increasing population and development in the area would continue to put pressure on the BLM to adequately manage travel and transportation on public lands. Public use of routes and trails would continue to increase as population increases. Increases in recreational use and visitor use are also expected. This indicates a need for continuing effective transportation and travel management planning throughout the WDO and in surrounding areas. Maintenance needs also would increase as routes become more heavily traveled.

4.3.6 Lands and Realty

Summary

In general, Effects Common to All Alternatives involve actions that continue to both allow and restrict certain land uses, depending on local resource conditions and opportunities for resource use and consumption. Specific actions that allow and restrict certain land uses are associated with the management of the following resources: air quality, forest and woodland products, weeds, rangeland, riparian and wetland resources, fish and wildlife, special status species, wildland fire, cultural resources, paleontological resources, visual resources, minerals, renewable energy, transportation and access, lands and realty, national trails, and WSAs. Reasonably foreseeable developments also influence actions that allow and restrict certain land uses.

Alternative A would continue to rely on dated Management Framework Plans and the 1999 Lands Amendment to Paradise-Denio and Sonoma-Gerlach Management Framework Plan to manage land

use and land designations. These plans are silent on current issues (such as the scattered land ownership pattern, renewable energy development, and ROWs) affecting the management of BLM-administered land, diminishing the ability of the BLM to effectively manage the land.

In absolute terms, Alternatives C and D would have similar impacts on land use and land designations. Alternative B would provide slightly fewer opportunities for changing land uses and designations.

In relative terms, Alternatives B, C, and D differ in their degree of impact on land use and land designations. The differences in degree of impact on land use and land designations are detailed below under each alternative. A noteworthy aspect of resource management actions that affect land use and land designations has to do with compatibility. For example, the allowance of one type of use can involve the restriction of a different type of use. Conversely, the restriction of one type of use can involve the allowance of a different type of use. Consequently, changes in land use typically involve both an increase and a decrease in the types of activities that can occur due to compatibility issues.

Methods of Analysis

Methods and Assumptions

Potential impacts on lands and realty from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and information gathered from the public during the planning process. Effects are quantified where possible. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- Retaining larger blocks of public land is advantageous to the BLM's management of all resources and programs since there are increased opportunities to develop long-term habitat and species management plans, watershed management plans, and public recreation opportunities, to manage forest and vegetable products, to administer livestock grazing, and to protect cultural resources;
- Consolidating public lands and eliminating scattered parcels of public land that lack access and are difficult to manage is beneficial to the BLM and the public;
- Access to public lands, for both the public and the BLM, and availability of public lands to meet public demands is a high priority of the Lands and Realty program;
- Identifying lands for disposal does not ensure that these lands would be sold or otherwise disposed;
- Before any disposals occur, lands would be examined for the presence of high-value resources. Lands that contain high surface values would not be disposed, or the disposal would provide for those values to be preserved;
- Acquisition, including direct purchase, conservation easement, donation, or exchange, would only be considered when there is a willing seller and the goals and objectives of the land use plan would be furthered;

- Mineral leasing would not occur in exclusion areas. It is also assumed that mineral leasing would not occur on withdrawn lands, if the reason for the mineral withdrawal is not compatible with leasing and the subsequent RFDs. Where mineral leasing does not occur, land management actions, such as granting rights-of-way, would not occur; and
- The effects of developing utility and transportation systems would be mitigated individually. Generally, this would be accomplished by consolidating new developments along existing routes or by innovative construction techniques that disturb less land and improve reclamation success.

Effects from Air Quality Management

Effects Common to All Alternatives

Activities on BLM-administered land would be required to comply with air quality standards. This would influence, for example, the timing, location, and mitigation associated with certain land uses, such as ROWs. There would be no new impacts on land use and land designations.

Individual Effects under Alternative A

There are no impacts, because there are no actions that are likely to affect land use and land designations.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Geology Management

Effects Common to All Alternatives

There are no effects common to all alternatives from geologic resource management.

Individual Effects under Alternative A

There would continue to be no actions for protecting unique geologic resources. There would be no new impacts on land use and land designations, and ongoing impacts would continue. For example, land uses such as ROWs may be authorized near unique geologic resources.

Individual Effects under Alternative B

Proposed activities that may impact unique geologic features would be authorized with the minimum mitigation measures sufficient to protect the values at risk. Impacts would be mitigated through

avoidance, reclamation, and other applicable use restrictions. This would alter certain land uses near unique geologic features in order to ensure compatibility of land uses, resulting in a localized impact.

Individual Effects under Alternative C

Proposed nondiscretionary activities that may affect geologic features would be authorized with appropriate mitigation measures to protect the values at risk. Discretionary activities that may affect geologic features would not be allowed. This would alter certain land uses, when compared to Alternatives B and D, near unique geologic features to ensure compatibility of land uses, resulting in a localized impact.

Individual Effects under Alternative D

Proposed activities that may impact geologic features would be authorized with mitigation measures appropriate to protect the values at risk. This would alter certain land uses near unique geologic features to ensure compatibility of land uses, resulting in a localized impact.

Effects from Soil Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from soil resources management.

Individual Effects under Alternative A

An objective of the BLM is to continue to reduce soil erosion. There would be no new impacts on land use and land designations, and ongoing impacts would continue.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

An objective of the BLM would be to maintain, protect, and improve soil processes appropriate to soil types, climate, and land form, as indicated by surface litter, biological soil crusts, hydrologic cycles, nutrient cycles, energy flows, and plant communities. Because of the soil factors specified for consideration, this would have a greater influence, for example, on the timing, location, and mitigation associated with certain land uses such as ROWs, when compared to Alternative A throughout the WDO.

Individual Effects under Alternative D

The impacts are the same as those under Alternative C.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from water resources management.

Individual Effects under Alternative A

There would continue to be no actions relating to avoidance and exclusion zones in wellhead protection zones. There would be no new impacts on land use and land designations, and ongoing impacts would continue. For example, land uses, such as for ROWs, may be authorized in wellhead protections zones.

Individual Effects under Alternative B

The BLM would manage wellhead protection zones as avoidance zones for discretionary actions that are not compatible. This would alter certain land uses such as for ROWs in wellhead protections zones to ensure compatibility of land uses throughout the WDO.

Individual Effects under Alternative C

The BLM would manage wellhead protection as exclusion zones for discretionary actions. This would alter certain land uses, such as for ROWs in wellhead protections zones, throughout the WDO, to ensure compatibility of land uses, more so than under Alternative B.

Individual Effects under Alternative D

The impacts are the same as those under Alternative B.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

Protections in certain areas (e.g., Stillwater Range and old growth stands) could reduce access to public lands in the long term. Ongoing impacts would be localized and would vary depending on the level of protection provided. There would be no new impacts.

Individual Effects under Alternative A

There are no impacts, because there are no actions that are likely to affect land use and land designations.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Implementing weed eradication programs could restrict access to public lands in the short term during program eradication. However, using and maintaining roads during weed eradication could improve access to public lands in the long term from ongoing maintenance of the transportation network. There would be no new impacts.

Individual Effects under Alternative A

There would continue to be no actions relating to invasive and noxious weeds and SOPs, BMPs, and mitigation measures on BLM and BLM-authorized activities. There would be no new impacts on land use and land designations.

Individual Effects under Alternative B

The BLM would develop and employ SOPs, BMPs, and mitigation measures for BLM and BLM-authorized activities to control, prevent, and treat the spread of invasive and noxious weeds. This would influence, for example, the timing and location of certain land uses, such as ROWs throughout the WDO.

Individual Effects under Alternative C

The impacts are the same as those under Alternative B.

Individual Effects under Alternative D

The impacts are the same as those under Alternative B.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect land use and land designations.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Permit terms and conditions to minimize adverse impacts on rangeland vegetation would restrict certain land uses in the long term throughout the WDO. Ongoing impacts would vary depending on the terms and conditions required. There would be no new impacts.

Rangeland treatments could restrict access to public lands in the short term during treatment implementation. However, using and maintaining roads during rangeland treatments could improve access to public lands in the long term. There would be no new impacts.

Individual Effects under Alternative A

Land use restrictions to restore and improve degraded rangelands would not be required under Alternative A. Realty discretionary actions would be permitted without restriction throughout the WDO. There would be no new impacts.

Individual Effects under Alternative B

Land use restrictions to restore and improve degraded rangelands would impact lands and realty management actions throughout the WDO in the long term. Impacts would vary depending on the type and intensity of land use restriction.

Realty discretionary actions would be permitted throughout the WDO, and impacts are similar to those described under Alternative A.

Individual Effects under Alternative C

Land use restrictions to restore and improve degraded rangelands would have impacts similar to those described under Alternative B.

Realty discretionary actions would not be permitted in exclusion areas for sagebrush, which would limit land use options in certain areas in the long term.

Individual Effects under Alternative D

Land use restrictions to restore and improve degraded rangelands would have impacts similar to those described under Alternative B.

Realty discretionary actions would not be permitted in exclusion areas for sagebrush, which would have impacts similar to those described under Alternative C.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Protection of riparian and wetland areas could limit access to public lands in specific areas. Ongoing impacts would be localized and long term and would vary depending on the level of protection provided. There would be no new impacts.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect land use and land designations.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Use restrictions to maintain and improve wildlife habitat would impact land use options in these areas in the long term. Ongoing impacts would vary depending on the type and intensity of use restrictions required. There would be no new impacts.

Individual Effects under Alternative A

Maintaining access routes that degrade aquatic resources would provide the least restrictions to lands and realty actions throughout the WDO in the long term. There would be no new impacts.

The BLM would continue to have no avoidance and exclusion areas. There would be no new impacts, and ongoing impacts would continue. For example, without avoidance and exclusion areas activities, such as for the development of roads and utility corridors for ROWs, could occur that are incompatible with other uses.

Individual Effects under Alternative B

Land treatments to improve wildlife habitat could restrict access to public lands in the short term during treatment implementation. However, using and maintaining roads during habitat treatments could improve access to public lands in the long term.

Removing, altering, and maintaining access routes that degrade aquatic resources could impact public land access in certain areas throughout the WDO in the long term. These impacts are likely to be localized.

The BLM would have the following avoidance and exclusion conditions:

- Avoidance—716,528 acres of BLM-administered land (excluding the NCAs) (10 percent) and
- Exclusion—0 acres of BLM-administered land (excluding the NCAs) (0 percent).

Compared to Alternative A, the BLM would have more avoidance areas and the same amount of exclusion areas. Avoidance areas would limit the types of actions that could occur in order to protect designated resource values and ensure the compatibility of different types of land uses. It would allow actions that are incompatible with ROW actions to occur in avoidance areas. For example, habitat improvements could occur in avoidance areas.

Individual Effects under Alternative C

Land treatments to improve wildlife habitat would have impacts similar to those described under Alternative B.

Removing access routes that degrade aquatic resources could cause the greatest impact on public land access in certain areas throughout the WDO in the long term. These impacts are likely to be localized.

Use restrictions near shorebird habitats would provide additional impacts on lands and realty actions in these areas in the long term.

The BLM would have the following avoidance and exclusion conditions:

- Avoidance—869,645 acres of BLM-administered land (excluding the NCAs) (12 percent) and
- Exclusion—1,279,481 acres of BLM-administered land (excluding the NCAs) (18 percent).

Avoidance areas are less restrictive than exclusion areas. Exclusion areas are functionally analogous to the phrase "no surface occupancy." Compared to Alternative A, the BLM would have more avoidance and exclusion areas. Both would limit ROW actions in order to protect a designated resource value and ensure the compatibility of different types of land uses. Also, it would allow actions that are incompatible with ROW actions to occur on avoidance and exclusion areas. For example, sage-grouse habitat improvements could occur in exclusion areas.

Individual Effects under Alternative D

Land treatments to improve wildlife habitat would have impacts similar to those described under Alternative B.

Removing, altering, and maintaining access routes that degrade aquatic resources could cause impacts similar to those described under Alternative B.

The BLM would have the following avoidance and exclusion conditions:

- Avoidance—1,325,967 acres of BLM-administered land (excluding the NCAs) (18 percent) and
- Exclusion—699,929 acres of BLM-administered land (excluding the NCAs) (10 percent).

Avoidance areas are less restrictive than exclusion areas. Exclusion areas are functionally analogous to the phrase "no surface occupancy." Compared to Alternative A, the BLM would have more avoidance and exclusion areas. Both would limit ROW actions in order to protect a designated resource value and ensure the compatibility of different types of land uses. Also, it would allow actions that are incompatible with ROW actions to occur on avoidance and exclusion areas. For example, sage-grouse habitat improvements could occur in exclusion areas.

Effects from Special Status Species Management

Effects Common to All Alternatives

The following actions would continue to occur:

- Protect sensitive species habitat by implementing mitigation measures to reduce adverse impacts. Mitigation measures include, but are not limited to, avoidance, no surface

occupancy, buffer zones, seasonal restrictions, off-site mitigation, use restrictions, rehabilitation, or other protective measures;

- Protect documented bald eagle, golden eagle, prairie falcon, and peregrine falcon cliff-nesting sites. Mitigate adverse impacts through use restrictions, avoidance, providing alternative viable nest sites, or employing other mitigation measures following the guidelines of the Bald and Golden Eagle Protection Act or applicable updates;
- Avoid tree control within a 1-mile radius of documented active ferruginous hawk nests. Mitigate adverse impacts through use restrictions, avoidance, providing alternative viable nest sites (preferably an identifiable alternative nest tree), or employing other mitigation measures;
- Protect documented northern goshawk nest areas and sites. Mitigate adverse impacts through use restrictions, avoidance, or providing alternative nest sites (preferably an alternate nest already built) within or adjacent to the nesting area or employing other mitigation measures; and
- Continue to pursue a mineral withdrawal for Osgood Mountain ACEC.

These actions are intended to continue to protect sensitive flora and fauna and their habitat from disturbance. People who use BLM-administered lands for recreation activities such as photography and bird watching would have a greater chance of seeing these species with the implementation of these actions. However, these actions could restrict other types of land uses on BLM-administered lands, such as by designating avoidance areas. There would be no new impacts.

Individual Effects under Alternative A

Alternative A would institute the fewest use restrictions (e.g., surface occupancy or disturbance, high-profile structure construction) in and near special status species occurrences and habitat. Ongoing impacts would be long term, would vary on a case-by-case basis, and are likely to be localized. There would be no new impacts.

Individual Effects under Alternative B

Use restrictions (e.g., surface occupancy or disturbance, high-profile structure construction) would be applied in and near special status species occurrences and habitat. Impacts would be long term, would vary on a case-by-case basis, and are likely to be localized.

Individual Effects under Alternative C

Alternative C would apply the greatest use restrictions (e.g., surface occupancy or disturbance, high-profile structure construction) in and near special status species occurrences and habitat. Impacts would be long term, would vary on a case-by-case basis, and are likely to be localized.

Individual Effects under Alternative D

Use restrictions in and near special status species occurrences and habitats would cause impacts similar to those described under Alternative B.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect land use and land designations.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Implementing a response to wildfires, based on social, legal, and ecological consequences of the fire, would require maintaining access routes throughout the WDO. As a result, this would increase access to public lands in the long term. There would be no new impacts.

Use restrictions to achieve healthy vegetative communities could cause impacts on lands and realty actions in the long term by preventing certain land use options in these areas. There would be no new impacts.

Land treatments related to wildland fire management could restrict access to public lands in the short term during treatment implementation. However, using and maintaining roads during treatments could improve access to public lands in the long term. There would be no new impacts.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect land use and land designations.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Cultural Resources Management

Effects Common to All Alternatives

The BLM would continue to develop stipulations, use restrictions, and mitigation measures to avoid or reduce adverse impacts on cultural resources. There would be no new impacts on land use and land designations.

Direct and indirect adverse impacts on eligible, unevaluated, or high-potential trail segments and associated sites would be mitigated by avoidance, project redesign, data collection, interpretation,

public education, or other means in consultation with the National Park Service, Nevada SHPO, and interested public. There would be no new impact on land use and land designations.

Individual Effects under Alternative A

The BLM would mitigate potential adverse impacts on historic landscapes associated with eligible, unevaluated, or high-potential trail segments by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone. There would be no new impacts on land use and land designations.

Individual Effects under Alternative B

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class III objective within six miles of the centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridors, which would be managed to VRM Class IV. Compared to Alternative A, there would be more opportunities for new types of land uses near the CNHT trail because VRM class designation objectives would allow for more changes to the aesthetics associated with the trail.

Individual Effects under Alternative C

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class II objective within six miles of the centerline, or to the visual horizon within the six-mile zone. The impacts are the same as under Alternative A.

Individual Effects under Alternative D

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridor at the southern edge of the Black Rock Desert. The portion of the trail viewshed that falls within the Black Rock Desert utility corridor would be managed to VRM Class III. Within the I-80 corridor, the trail viewshed would be managed to VRM Class III within six miles of the trail centerline or to the visual horizon within the six-mile zone, except for the power line corridor and sensitive areas of the trail viewshed. Sensitive areas would be managed to VRM Class II one mile on either side of the centerline of the trail. The I-80 trail viewshed in this power line corridor would be managed to VRM Class IV. Compared to Alternative A, there would be more opportunities for new types of land uses near the CNHT trail because VRM class designation objectives would allow for more changes to the aesthetics associated with the trail. However, fewer opportunities would exist under Alternative D when compared to Alternatives B and C.

Effects from Tribal Consultation

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect land use and land designations.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

The BLM would require a permit for the removal of paleontological resources for the purposes of scientific research, inventory, planning, and monitoring or to mitigate adverse impacts from authorized or unauthorized uses. It also would issue permits for the noncommercial collection of vertebrate fossils, including their trace fossils such as trackways and coprolites. Although permits for the noncommercial collection of invertebrate, plants, fossils, and petrified wood are not normally required within limits defined by regulation, locations containing noteworthy occurrences of such fossils may be closed to collection except under permit. These actions would continue to allow the collection of paleontological resources through a regulated process, enabling the BLM to monitor collection activities and the status of paleontological resources. There would be no new impacts.

Individual Effects under Alternative A

The BLM would protect scientific values (paleontological-vertebrate fossils found on public lands). There would be no new impact on land use and land designations.

Individual Effects under Alternative B

No discretionary activities would be authorized on public lands if they would knowingly disturb or alter, injure, or destroy scientifically important paleontological resources, unless impacts can be mitigated. This would influence, for example, the location of certain land uses, such as land tenure adjustments.

Individual Effects under Alternative C

The impacts are the same as those under Alternative B.

Individual Effects under Alternative D

The impacts are the same as those under Alternative B.

Effects from Visual Resources Management

Effects Common to All Alternatives

The BLM would manage CNHT according to BLM policy and guidance by protecting scenic landscapes and historic settings. There would be no new impacts.

Individual Effects under Alternative A

The BLM would continue to manage visual resources associated with ACECs and backcountry byways subject to VRM classification established in the Paradise-Denio and Sonoma-Gerlach Management Framework Plans. The BLM would continue to not identify specific VRM class designations for priority watersheds. There would be no new impacts on land use and land designations.

Individual Effects under Alternative B

The BLM would manage the Osgood Mountain ACEC and backcountry byways and associated landscapes as VRM Class II and would manage priority watersheds as VRM Class II. This could limit the types of land uses that could occur in these areas in order to comply with VRM class designation objectives.

Individual Effects under Alternative C

The BLM would manage ACECs and associated landscapes as VRM Class II. Backcountry byways and associated landscapes and priority watersheds would be managed according to VRM Class II objectives. This could limit the types of land uses that could occur in these areas in order to comply with VRM class designation objectives.

Individual Effects under Alternative D

The BLM would manage the Osgood Mountain ACEC and associated landscapes as VRM Class III. The Pine Forest, Raised Bog, and Stillwater ACECs and associated landscapes would be managed as VRM Class II. Backcountry byways and associated landscapes would be managed according to VRM Class III objectives. Priority watersheds and associated landscapes would be managed according to VRM Class II objectives. This could limit the types of land uses that could occur in these areas in order to comply with VRM class designation objectives.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There are no effects common to all alternatives from cave and karst resource management.

Individual Effects under Alternative A

The BLM would continue to not identify specific actions designed to protect cave and karst resources. There would be no new impacts on land use and land designations, and ongoing impacts would continue. For example, land uses such as for recreation may be authorized near cave and karst resources.

Individual Effects under Alternative B

The BLM would implement appropriate mitigation measures such as seasonal closures, avoidance, fencing, bat gates, and signing to protect unique geologic features and wildlife habitat. This would limit certain land uses near unique geologic features.

Individual Effects under Alternative C

The BLM would not allow surface-disturbing activities within 500 feet of natural caves or karsts. This would limit certain land uses near unique geologic features.

Individual Effects under Alternative D

The impacts are the same as those under Alternative B.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

There are no effects common to all alternatives from livestock grazing management.

Individual Effects under Alternative A

The BLM would continue to designate 8,232,727 acres as available to livestock grazing and would designate 296,008 acres as closed to livestock grazing. Incompatible land uses would continue to be prohibited. There are no new impacts.

Individual Effects under Alternative B

The impacts are the same as those described under Alternative A.

Individual Effects under Alternative C

Option 1

The BLM would designate 8,038,084 acres as available to livestock grazing and would designate 297,999 acres as closed to livestock grazing. These designations are similar to Alternative A. Incompatible land uses would continue to be prohibited. There would be no new impacts.

Option 2

No grazing would be allowed. This would increase the types of activities that could occur on lands where livestock grazing once occurred. Activities that are incompatible with livestock grazing could potentially occur on lands where livestock grazing once occurred.

Individual Effects under Alternative D

The BLM would designate 8,016,754 acres as available to livestock grazing and would designate 319,328 acres as closed to livestock grazing, thereby limiting the types of compatible land uses that could occur. This alternative has the least number of acres open to livestock grazing and the most number of acres closed to livestock grazing. Because of the increase in the number of acres closed to livestock grazing, more land uses that are incompatible with livestock grazing could occur under this alternative. Incompatible land uses would continue to be prohibited.

Effects from Minerals Management

Effects Common to All Alternatives

The BLM would ensure occupancy does not hinder previously existing access to public lands. The BLM would continue to ensure that previously existing routes would continue to be available for accessing public lands during the development of mineral resources. There would be no new impacts with respect to public land access.

Appendix I contains RFDs, which describe potential scenarios for the development of mineral and energy resources on BLM-administered land. The development scenarios vary with the type of resource that is being developed. Nevertheless, all RFDs involve reducing the number of compatible

land uses. For example, horseback riding could not occur in the same location as a geothermal power plant, and livestock grazing could not occur in the same location as a solar development. The development of mineral and energy resources would be compatible with the BLM's mission of managing land for multiple uses. It also would prohibit the use of BLM-administered land for certain uses at the same time. There would be no new impacts.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists. Incompatible actions would not be allowed. For example, some reasonable foreseeable development actions would be incompatible with some forms of recreation or actions intended to protect sensitive species. Because incompatible actions would not be allowed, certain types of land uses would be limited.

Individual Effects under Alternative A

Salable

The BLM would continue to maintain 418,938 acres as closed to mineral material disposal. This would continue to prevent mineral material actions on five percent of the land. Conversely, it would continue to allow actions that are incompatible with mineral material actions to occur on this land. There are no new impacts.

Fluid

The BLM would continue to maintain the following conditions:

- Open to leasing but subject to a No Surface Occupancy—29,582 acres of BLM-administered land (excluding the NCAs) (0.4 percent); and
- Closed to leasing—446,887 acres of BLM-administered land (excluding the NCAs) (6 percent).

There are no new impacts.

Solid

The BLM would continue to maintain the following conditions:

Open 6,776,198

- Open to leasing—6,776,198 (94 percent);
- Open to leasing but subject to a No Surface Occupancy: National Register eligible sites;
- Closed to leasing—416,652 acres of BLM-administered land (excluding the NCAs) (6 percent).

There are no new impacts.

Locatable

The BLM would continue to withdraw lands from locatable mineral development on a case-by-case basis. Existing mineral withdrawals include Pine Forest, George Lund Petrified Forest, Lovelock Cave, and FAA mineral withdrawals (Sod House and Lovelock). Lands identified for potential mineral withdrawal would continue to include Porter Springs. There are no new impacts.

Individual Effects under Alternative B

Salable

The impacts are the same as those under Alternative A.

Fluid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—1,374,431 acres of BLM-administered land (excluding the NCAs) (19 percent) and
- Closed to leasing—1,132,594 acres of BLM-administered land (excluding the NCAs) (16 percent).

Compared to Alternative A, this would prevent fluid mineral actions on more land. Conversely, it would allow actions that are incompatible with fluid mineral actions to occur on this land.

Solid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—221,644 acres of BLM-administered land (excluding the NCAs) (21 percent) and
- Closed to leasing—1,124,266 acres of BLM-administered land (excluding the NCAs) (13 percent).

Compared to Alternative A, this would prevent solid mineral actions on more land. Conversely, it would allow actions that are incompatible with solid mineral actions to occur on this land.

Locatable

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Salable

The BLM would establish 837,049 acres as closed to mineral material disposal. This would prevent mineral material actions on 12 percent of the land, which is more than under all the alternatives. Conversely, it would allow more actions that are incompatible with mineral material actions to occur on this land.

Fluid

The BLM would have the following conditions:

- Closed to leasing—4,455,026 acres of BLM-administered land (excluding the NCAs) (62 percent).

This would prevent fluid mineral actions on more land than the other alternatives. Conversely, it would allow actions that are incompatible with fluid mineral actions to occur on this land.

Solid

The BLM would have the following conditions:

- Closed to leasing—4,455,645 acres of BLM-administered land (excluding the NCAs) (62 percent).

This would prevent solid mineral actions on more land than the other alternatives. Conversely, it would allow actions that are incompatible with solid mineral actions to occur on this land.

Locatable

The BLM would continue to withdraw lands from locatable mineral development on a case-by-case basis. Existing mineral withdrawals include Pine Forest, George Lund Petrified Forest, Lovelock Cave, and FAA mineral withdrawals (Sod House and Lovelock). Lands identified for potential mineral withdrawal would include Porter Springs, Osgood Mountain ACEC, Pine Forest ACEC, Raised Bog ACEC, Stillwater ACEC, areas identified as having significant, non-economic geologic resources (Action C-G 1.1), a larger Lovelock Cave withdrawal (Action C-MR 9.2), and a larger George Lund Petrified Forest mineral withdrawal (Action C-MR 9.2). Also, lands acquired (by any process) would be withdrawn from mineral entry. Compared to Alternative A, this would prevent locatable mineral actions on more land. Conversely, it would allow actions that are incompatible with locatable mineral actions to occur on this land.

Individual Effects under Alternative D

Salable

The BLM would establish 743,301 acres as closed to mineral material disposal. This would prevent mineral material actions on 10 percent of the land, which is more than under Alternative A. Conversely, it would allow more actions that are incompatible with mineral material actions to occur on this land.

Fluid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—326,743 acres of BLM-administered land (excluding the NCAs) (5 percent) and
- Closed to leasing—1,198,464 acres of BLM-administered land (excluding the NCAs) (17 percent).

Compared to Alternative A, this would prevent fluid mineral actions on more land. Conversely, it would allow actions that are incompatible with fluid mineral actions to occur on this land.

Solid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—326,796 acres of BLM-administered land (excluding the NCAs) (5 percent) and
- Closed to leasing—1,198,694 acres of BLM-administered land (excluding the NCAs) (17 percent).

Compared to Alternative A, this would prevent solid mineral actions on more land. Conversely, it would allow actions that are incompatible with solid mineral actions to occur on this land.

Locatable

The BLM would continue to withdraw lands from locatable mineral development on a case-by-case basis. Existing mineral withdrawals include Pine Forest, George Lund Petrified Forest, Lovelock Cave, and FAA mineral withdrawals (Sod House and Lovelock). Lands identified for potential mineral withdrawal would include Porter Springs, Osgood Mountain ACEC, areas identified as having significant, non-economic geologic resources (Action D-G 1.1), a larger Lovelock Cave withdrawal (Action D-MR 9.2), and a larger George Lund Petrified Forest mineral withdrawal (Action D-MR 9.2). Compared to Alternative A, this would prevent locatable mineral actions on more land. Conversely, it would allow actions that are incompatible with locatable mineral actions to occur on this land.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect land use and land designations.

Effects from Renewable Energy Management

Effects Common to All Alternatives

ROWs issued for wind energy development would promote land use for renewable energy while potentially detracting from other land uses, such as for mineral energy development in the long term. There would be no new impacts.

Individual Effects under Alternative A

Alternative A would promote development of the fewest sources of renewable energy by focusing solely on wind energy development. This would favor land use in the WDO towards wind energy in the long term. There would be no new impacts.

Individual Effects under Alternative B

Under Alternative B, land would be leased to promote the greatest suite of renewable energy in the long term. This would allow for the largest number of land uses and would provide a flexible approach to lands and realty management throughout the WDO.

Individual Effects under Alternative C

Under Alternative C, land would be leased to promote the greatest suite of renewable energy in the long term, similar to Alternative B. However, restrictions placed on these actions would limit some lands and realty actions throughout the WDO in the long term.

Individual Effects under Alternative D

Under Alternative D, land would be leased to promote the greatest suite of renewable energy in the long term. Impacts would be similar to those described under Alternative B.

Effects from Transportation and Access Management

Effects Common to All Alternatives

An objective of the BLM would be to continue to provide access to public lands recreational sites through active road maintenance and legal easements. Changes in OHV use designations would require site-specific implementation plans and route designations before changes in motorized travel. There would be no new impacts on land use and land designations.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect land use and land designations.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Lands and Realty Management

Effects Common to All Alternatives

Communication Sites

The BLM would provide for communication sites on public land by using existing sites when frequencies are compatible. This would continue to minimize the development of various communication sites by consolidating facilities. It also would continue to limit the types of

compatible land uses that could occur. Incompatible land uses would continue to be prohibited. There would be no new impacts.

Trespass

The BLM would pursue existing unauthorized use cases for compliance and would coordinate with state and local government officials. The BLM would check the boundaries of all expanding subdivisions and isolated dwellings for encroachment and would take action as necessary. This would continue to reduce trespassing, thereby protecting BLM-administered land for use by the general public. There would be no new impacts.

There are some documented and unresolved trespass cases in the WDO area. The BLM also expects that there are trespass cases that have not been discovered or documented. Because of workload priorities and limited staffing, these ongoing trespass issues are expected to remain unresolved.

Access

The BLM would review all proposed disposals of public lands, retain any needed legal access to the remaining public lands, and ensure public access is obtained through perpetual ROWs and development of systems roads with all land acquisitions, transfers, and sales. The BLM would continue to maintain access to public land. There are no new impacts involving public access.

Individual Effects under Alternative A

Land Tenure Adjustments

The BLM would continue to have the following retention and disposal conditions:

- Retain 2,936,548 acres of BLM-administered land (excluding the NCAs) (41 percent);
- Potentially retain 1,281,383 acres of BLM-administered land (excluding the NCAs) (18 percent); and
- Potentially dispose of 2,989,030 acres of BLM-administered land (excluding the NCAs) (41 percent).

There would be no new impacts, and ongoing impacts would continue. With the current scattered land pattern of the WDO area, the BLM would continue to struggle with the management of isolated or small parcels. Large areas of land would likely be categorized for land tenure adjustments, allowing the BLM to use the proper authority to block up land. By blocking up lands, management would be more effective.

Individual Effects under Alternative B

Land Tenure Adjustments

The BLM would manage for the following retention and disposal conditions:

- Retain 5,076,295 acres of BLM-administered land (excluding the NCAs) (70 percent) and
- Potentially dispose of 2,128,543 acres of BLM-administered land (excluding the NCAs) (30 percent).

Compared to Alternative A, the BLM would retain a larger percentage of land. This would allow for more public uses to continue occurring. It is assumed that retention and disposal actions would address the scattered land pattern of the WDO area, thereby making land management more effective.

Individual Effects under Alternative C

Land Tenure Adjustments

The BLM would manage for the following retention and disposal conditions:

- Retain 5,989,664 acres of BLM-administered land (excluding the NCAs) (83 percent) and
- Potentially dispose of 1,215,963 acres of BLM-administered land (excluding the NCAs) (17 percent).

Compared to Alternative A, the BLM would retain a larger percentage of land. This would allow for more public uses to continue occurring. It is assumed that retention and disposal actions would address the scattered land pattern of the WDO area, thereby making land management more effective.

Individual Effects under Alternative D

Land Tenure Adjustments

The BLM would manage for the following retention and disposal conditions:

- Retain 5,922,909 acres of BLM-administered land (excluding the NCAs) (82 percent; and
- Potentially dispose of 1,281,959 acres of BLM-administered land (excluding the NCAs) (18 percent).

Compared to Alternative A, the BLM would retain a larger percentage of land. This would allow for more public uses to continue occurring. It is assumed that retention and disposal actions would address the scattered land pattern of the WDO area, thereby making land management more effective.

Effects from ACEC/ RNA Management

Effects Common to All Alternatives

There are no effects common to all alternatives from ACEC/RNA management.

Individual Effects under Alternative A

The BLM would maintain the designation of the Osgood Mountains ACEC. Incompatible land uses would continue to be prohibited to protect the special qualities of the ACEC. There would be no new impacts.

Individual Effects under Alternative B

The impacts are the same as those described under Alternative A.

Individual Effects under Alternative C

The BLM would maintain the designation of the Osgood Mountains ACEC. It would also designate the Pine Forest, Raised Bog, and Stillwater ACECs. Because there would be more acres of ACECs, there would be a decrease in the types of compatible land uses that could occur in these areas. Incompatible land uses would continue to be prohibited.

Individual Effects under Alternative D

The impacts are the same as those under Alternative C.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect land use and land designations.

Effects from National Trails Management

Effects Common to All Alternatives

The impacts are the same as those under Effects from Cultural Resources Management.

Individual Effects under Alternative A

The impacts are the same as those under Effects from Cultural Resources Management.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no effects common to all alternatives from WSR management.

Individual Effects under Alternative A

No segments of rivers or streams are currently managed as WSR in the WDO. There would be no new impacts.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The BLM would protect eligible river segments in accordance with tentative suitability classifications. The impacts are the same as those under Alternative B.

Individual Effects under Alternative D

The BLM would protect eligible river segments within priority watersheds. The impacts are the same as those under Alternative B, with the exception that WSR segments outside of priority watersheds would not be afforded this protection and would not have the potential for land use restrictions.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

The BLM would continue to manage the 13 WSAs under BLM's Interim Management Policy for Lands under Wilderness Review until Congress either designates these areas or releases them for other purposes. If released by Congress, the BLM would manage all or parts of 13 WSAs for purposes other than wilderness using BMPs, land use restrictions, authorization stipulations, and mitigation measures to protect resources. Land uses in WSAs released from consideration for wilderness would likely increase, because the BMPs, land use restrictions, authorization stipulations, and mitigation measures would be less restrictive than the Interim Management Policy for Lands under Wilderness Review. There are no new impacts on land uses and land designations.

Individual Effects under Alternative A

There are no impacts because there are no specific actions that are likely to affect land use and land designations.

Individual Effects under Alternative B

The impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The BLM would protect wilderness characteristics with a designation of closed to mineral leasing, ROW exclusion zones, and priority habitat 1 in the following areas:

- Bluewing Mountains (25,651 acres);
- North Sahwave Mountains (45,686 acres);
- Fencemaker Area of the East Range (50,282 acres);
- Portion of the Tobin Range between the China Mountain WSA and the Mount Tobin WSA (33,854 acres);

- Granite Peak (43,202 acres); and
- Buckhorn Peak (23,399) acres.

This would limit certain types of land use activities. Conversely, it would promote types of activities that are incompatible with the actions being limited.

Individual Effects under Alternative D

The impacts are the same as those under Alternative A.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect land use and land designations.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect land use and land designations.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no effects common to all alternatives from sustainable development management.

Individual Effects under Alternative A

Alternative A does not address specific sustainable development actions. The impacts identified below for Alternatives B, C, and D would not necessarily occur. There are no new impacts.

Individual Effects under Alternative B

Alternative B would pose some limitations to disposal of lands and authorization of ROWs within the WDO in the long term.

Requirements for proposed reuse of lands could have short-term impacts because coordination and public input could slow down implementing lands and realty actions. In the long term, however, lands and realty actions would be implemented in a more sustainable way.

Actions regarding mineral operation sites would have impacts similar to those for proposed reuse of lands. This is because more planning would be required in the initial stages but would provide for long-term sustainable management of lands.

Individual Effects under Alternative C

Alternative C would pose the greatest limitations to disposal of lands and authorization of ROWs within the WDO in the long term.

Requirements for proposed reuse of lands could have impacts similar to those described under Alternative B.

Actions regarding mineral operation sites would be the most restricted under Alternative C. Impacts are similar to those for proposed reuse of lands.

Individual Effects under Alternative D

Alternative D would pose some limitations to disposal of lands and authorization of ROWs within the WDO in the long term.

Requirements for proposed reuse of lands could have impacts similar to those described under Alternative B.

Actions regarding mineral operation sites would have impacts similar to those described under Alternative B.

Cumulative Effects

Past, present, and reasonably foreseeable actions affect lands and realty. Urban development and private land owners in rural areas will continue to restrict access to public lands. Human activities such as mining and livestock grazing will continue to require the issuance of permits and authorization of ROWs. Land exchanges will continue to consolidate public lands and facilitate land management. Counties within the planning area will begin to address increased growth in county development plans and other planning and zoning efforts, which should involve land management coordination with the BLM.

4.4 SPECIAL DESIGNATIONS

This section addresses impacts on special designations, which include ACECs, WSR segments, BCBs, Wilderness Areas, WSAs, and WWV sites. Impacts on wilderness characteristics are also addressed in this section.

There are seven Wilderness Areas and portions of two others within the WDO administrative boundary. They are within the planning boundary of the Black Rock NCA. The Augusta Mountains WSA and the Lahontan Cutthroat Trout WSA and ISA are also within the planning boundary of the Black Rock NCA. Special designation areas addressed in the Black Rock NCA plan will not be addressed in the Winnemucca RMP. National Historic Trails are addressed in Section 4.2.13, Cultural Resources.

4.4.1 Areas of Critical Environmental Concern

Summary

In general, effects common to all alternatives involve actions that maintain or improve the qualities ACECs. Administrative designations addressed in this section include that of Areas of Critical Environmental Concern (ACECs). Potential ACEC designated areas were identified in the ACEC Relevance and Importance Evaluations (2006), Appendix F.

Under Alternative A, the BLM would continue to rely on dated management framework plans, along with current policy and guidance for the Osgood Mountain milkvetch ACEC. These plans are silent on areas recently proposed for ACECs and wild and scenic rivers.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area, and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in BLM management to protect values in special designation ACECs;
- The proposed management prescribed for an area with a special designation would protect the qualities that are associated with the special designation for the area;
- Activities proposed that would not initially meet objectives for areas with special designations would be mitigated to the extent needed to meet the objectives; and
- Fuel treatments would reduce fuel loads and decrease the risk of catastrophic fire that would destroy vegetation ACEC values. Actions to limit vegetation treatments could prevent ecosystem health improvements in the long term but would minimize disturbance to certain areas in the short term.

Effects from Air Quality Management

Effects Common to All Alternatives

Air quality protections would benefit ecosystems by reducing air pollution and maintain ACEC values.

Individual Effects under Alternative A

The Pine Forest, Raised Bog, and Stillwater ACECs would not be designated under Alternative A. The BLM would still comply with air quality regulations and use smoke modeling for prescribed fire.

Individual Effects under Alternative B

Alternative B allows for 106,696 acres for allowing fire for resource benefit. Impacts on air quality would continue over a longer period of time if allowing fire for resource benefit is implemented. In order to comply with air quality regulations and to follow smoke modeling forecasts, fire use in the Pine Forest and Stillwater ACECs might not occur or would be delayed. Allowing fire for resource benefit may impact air quality from smoke, which would be mitigated through smoke modeling and compliance with air quality regulations.

Individual Effects under Alternative C

The BLM would comply with air quality regulations and would use smoke modeling for wildland fire. In order to comply with air quality regulations and to follow smoke modeling forecasts, fire use in the Pine Forest and Stillwater ACECs might not occur or would be delayed. Air quality management and air quality impacts for allowing fire for resource benefit would not occur under this alternative.

Individual Effects under Alternative D

Impacts from air quality management are similar to those described in Alternative C. However, allowing fire for resource benefit may impact air quality from smoke, which would be mitigated through smoke modeling and compliance with air quality regulations.

Effects from Geology Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Soil Resources Management

Effects Common to All Alternatives

Soil erosion reduction measures, including seeding and improving vegetative cover, would reduce compaction, would increase infiltration, and would improve ecosystem health over the short term. These impacts could extend into long-term benefits from increased vegetative productivity and improved habitat connectivity. All of these effects would help to enhance ACEC values.

Individual Effects under Alternative A

Land reclamation and rehabilitation in Alternative A would protect soil disturbed or burned from wind and water erosion. Impacts from protecting soils would be minimal because only one ACEC, totaling 60 acres would be designated. The Osgood ACEC values would continue to be protected.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Implementation of permit stipulations, BMPs, and mitigation measures would help prevent wind and water erosion to soils with ACECs. Land reclamation and rehabilitation actions under Alternative C would require reclamation of all surface-disturbing activities. This would allow for native vegetation to reestablish and would maintain ACEC wildlife habitat and cultural and scientific values over the long term.

Soil compaction prevention measures are the most stringent under this alternative, providing for seasonal use restrictions. This would benefit ACECs by reducing the potential for compaction.

Individual Effects under Alternative D

Impacts would be similar to Alternative C, but land reclamation actions under Alternative D would provide a more flexible approach to land reclamation. Impacts would vary depending on how and if reclamation was achieved, including whether native or nonnative seeds were used in revegetating lands. Impacts would be long term.

Soil compaction prevention measures would implement seasonal use restrictions, which would occur on a case-by-case basis. These measures would improve vegetation health and vigor from decreased soil compaction and increased infiltration over the long term.

Effects from Water Resources Management

Individual Effects under Alternative A

Water resources management in the Osgood ACEC include development of more intensive mitigation measures to protect water resources, which would improve water quality and would maintain or increase water quantity. Impacts from water management are expected to be minimal because there are no water resources within the ACEC boundary.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Priority watershed areas within the Pine Forest ACEC would protect wildlife habitat and watersheds to ensure long-term sustainable water and improve or maintain hydrologic functions. Water resources management in all the ACECs include development of more intensive mitigation measures to protect water resources, which would improve and protect ACEC values and water quality and quantity.

Individual Effects under Alternative D

Impacts are the same as those under Alternative C.

Effects from Vegetation—Forest/Woodland Products Management

Individual Effects under Alternative A

There would be no impacts on the Osgood ACEC because no woodlands are within the ACEC boundary.

Individual Effects under Alternative B

The impacts under this alternative are the same as those described under Alternative A.

Individual Effects under Alternative C

There would be no impacts from woodland and forestry management within the Osgood and the Raised Bog ACECs. Within the Pine Forest and Stillwater ACECs, Alternative C would protect stands from being harvested for forest products. Areas that exhibit or are characterized by stands of old growth forests would be further protected. Woodland areas within the ACECs would have more intensive management, including development of mitigation measures to allow natural ecosystem functions to occur. Allowable treatments to improve stand health would be limited to mechanical or biological treatments, which may not be as effective as other treatments (prescribed fire or chemical controls) that are available, and improvement in stand health may take longer.

Individual Effects under Alternative D

There would be no impacts from woodland and forestry management within the Osgood and the Raised Bog ACECs. Within the Stillwater ACEC, Alternative D would allow harvesting for forest products, and areas that exhibit or are characterized by stands of old growth forests would be further protected. Woodland areas within the ACECs would have more intensive management, including development of mitigation measures to allow natural ecosystem functions to occur, consistent with the ACEC values that established designation. Allowable treatments to improve stand health include mechanical, chemical, prescribed fire, and biological treatments, which offer an assortment of effective treatments to improve stand health. Stand health would improve in a shorter timeframe. This alternative would also allow for more opportunity to harvest juniper for woodland products within the Stillwater ACEC. There would be no impacts on the Pine Forest ACEC from woodland harvesting because there would be no designated harvest areas identified with the ACEC boundary.

Individual Alternative Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Actions to decrease weeds on BLM-administered lands would improve ecosystem health and habitat values by increasing native species in both the short term and long term. Weeds actions would have impacts similar to those described under Methods and Assumptions at the beginning of this section.

Individual Effects under Alternative A

Impacts from weed management would be minimal because only 60 acres within the Osgood ACEC would be designated. Control of weeds to protect sensitive plants would become a priority in the event that weeds were established and spreading within the ACEC.

Individual Effects under Alternative B

Impacts from weed management are similar to those under Alternative A.

Individual Effects under Alternative C

Short–term weed control methods would be limited to mechanical and biological treatments, which would take longer to control weeds and improve rangeland health. Long-term ecological health may be realized because no residual effects from chemicals would occur.

Individual Effects under Alternative D

Short-term weed control methods include a variety of treatments, including chemical and prescribed fire. Short-term weed control would improve ecosystem health. Long-term improvements to ecosystems should occur within shorter timeframes. Weed control would be a priority within ACECs in order to maintain ACEC designation values (wildlife habitat, cultural, scientific, sensitive plants).

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Improving degraded rangeland would reduce the prevalence of invasive species and improve species diversity and resilience. With healthier native vegetation, ACEC values with respect to rangelands would be improved over the long term.

Individual Effects under Alternative A

There would be few impacts on the Osgood ACEC from vegetation rangeland management. Mitigation measures would be developed to protect the Osgood Mountain milkvetch.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Option 1

Vegetation management would include rehabilitation of areas disturbed or burned and would improve areas from FRCC 3 to FRCC 2 on 80,000 acres of rangeland. These actions would stabilize areas, would deter the establishment of weeds, and would allow for long-term reestablishment of native plant communities within ACECs.

Option 2

Prohibiting grazing would allow fuels to build up within the ACECs, increasing the risk of fire over the long term.

Individual Effects under Alternative D

Impacts are similar to those described under Alternative C. Vegetation management would include rehabilitation of areas disturbed or burned and would improve areas from FRCC 3 to FRCC 2 on 70,000 acres of rangeland. Vegetation manipulation treatments would include mechanical, biological, prescribed fire, and chemical treatments. Vegetative communities within the ACECs would improve rangeland health through the use of a wider array of treatment methods.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Improving PFC within ACECs would improve functioning conditions of riparian and wetland areas and would improve riparian vegetation health.

Individual Effects under Alternative A

There would be few impacts from riparian and wetlands management on the Osgood ACEC because there are no riparian and wetland areas within the ACEC.

Individual Effects under Alternative B

Vegetation improvement treatments for riparian and wetlands management would have impacts similar to those described under Alternative A.

Individual Effects under Alternative C

Option 1

The greatest amount of riparian areas and wetlands (a minimum of 85 percent by 2028) would be restored to PFC under this alternative, which would improve functioning conditions and vegetative health within riparian and wetland areas. Implementation of SOPs and BMPs would also reduce impacts on riparian and wetland areas within ACECs from other public land uses.

Option 2

Removing grazing from lands in the WDO would benefit riparian and wetland areas because there would be no grazing impacts causing soil compaction, weed spread or introduction, and trampling of vegetation over the long term from livestock. However, fuels would be allowed to build up within riparian and wetland areas, which would make ACECs vulnerable to wildfire.

Individual Effects under Alternative D

Riparian areas and wetlands (85 percent by 2028) would be progressing toward or restored to PFC under this alternative, which would improve functioning conditions and vegetative health within

riparian and wetland areas. Implementation of SOPs and BMPs would also reduce impacts on riparian and wetland areas within ACECs from other public land uses.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Fish habitat management actions include maintaining and improving lentic and lotic fish habitat, including monitoring aquatic and riparian habitat conditions. Implementation of BMPs and SOPs would reduce adverse impacts on fish habitat areas within ACEC.

Wildlife management actions include improving and protecting waterfowl habitats, protecting migratory birds and their nests, and maintaining and enhancing wildlife habitat. Implementation of BMPs and SOPs would reduce adverse impacts and would improve wildlife habitat. Direct impacts on migratory birds are anticipated to be low due to requirements for pre-disturbance inventories and implementation of seasonal use restrictions or avoidance of nests.

Individual Effects under Alternative A

Impacts on the Osgood ACEC would be minimal due to the size and type of wildlife habitat within the ACEC. Implementation of mitigation measures and use restrictions would reduce impacts on wildlife habitat within the ACEC. There would be no impacts from fish management within the Osgood ACEC.

Individual Effects under Alternative B

Impacts are the same as those described under Alternative A.

Individual Effects under Alternative C

Impacts on the Osgood ACEC are similar to those described under Alternative A. Priority wildlife habitat areas would be established within the Pine Forest ACEC. Wildlife habitat would be protected and restored because land treatments and mitigation measures would be emphasized within this ACEC. In all ACECs, mitigation measures and BMPs would be implemented to achieve desired wildlife population and habitat conditions, ultimately reducing adverse impacts. Few wildlife management impacts would occur within the Raised Bog ACEC. No artificial waters would be developed within any of the ACECs, so wildlife populations would be constrained to existing water sources. There would be no impacts from fisheries management within the Osgood, Stillwater, and Raised Bog ACECs. Management actions to limit stream bank alteration should improve stream bank channel stability within the Pine Forest ACEC.

Individual Effects under Alternative D

Impacts on the Osgood ACEC are similar to those described under Alternative A.

Few wildlife management impacts would occur within the Raised Bog ACEC due to the size and nature of habitat within this ACEC. In all ACECs, mitigation measures and BMP would be implemented to achieve desired wildlife population and habitat conditions, ultimately reducing any adverse impacts. Artificial waters would be developed within any of the ACECs, so wildlife populations could expand as new areas would be available as habitat. There would be no impacts

from fisheries management within the Osgood, Stillwater, and Raised Bog ACECs. Impacts from fisheries management are similar to those described under Alternative C.

Effects from Special Status Species Management

Effects Common to All Alternatives

Special status species management across all alternatives would prevent activities leading to listing of species and would require plant inventories, sage-grouse, pygmy rabbit, bat, and raptor avoidance and mitigation and monitoring. Actions that avoid impacts on listed or sensitive species or their habitat would protect and preserve ACEC values.

Restrictions on uses near special status plants, sage-grouse and sage-grouse leks (courtship and mating areas), pygmy rabbits, bat habitat, and raptors would reduce disturbance to these areas and would protect sensitive species habitat and enhance ACEC values.

Individual Effects under Alternative A

The BLM would continue to manage the Osgood Mountains ACEC for the protection of the milkvetch. This would continue to protect the special qualities associated with the designation of the ACEC. Certain uses or activities may be prohibited within the ACEC to protect sensitive plants. Implementation of permit stipulations, BMPs, and mitigation measures should maintain and protect the special values of the ACEC.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Alternative C places the greatest amount of restrictions on activities that occur near special status species and their habitats in order to protect sensitive species. Tree removal control within a mile of active ferruginous hawk nests would protect northern goshawk nesting areas. Mitigation measures, including use restrictions and avoidance and providing alternate nest sites would maintain ACEC wildlife and special status species habitat enhancing ACEC values. Wildlife priority 1 habitat areas within ACEC boundaries would further emphasize and prioritize development of mitigation measures and would permit stipulations to protect sensitive species habitat.

Individual Effects under Alternative D

Special status species management would include development of BMPs and mitigation measures to protect habitat within the ACECs. Protecting sensitive species habitat would enhance and protect ACEC qualities. Priority 2 habitat areas within ACECs would place fewer restrictions and mitigation measures to protect sensitive species habitat, compared to Priority 1 areas.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Managing wild horses and burros within HMAs and HAs that overlap ACEC boundaries includes controlling horse and burro populations based on AML. Controlling herd size would limit and reduce the potential for overgrazing areas. Seasonal limitations on certain activities, such as motor vehicle racing, would limit uses in areas and would maintain ACEC qualities. Population control measures would reduce the impact of WHB on lands by decreasing the risk of soil compaction, trampling, and the introduction or spread of weeds. This would help maintain ecosystem health and ACEC values.

Individual Effects under Alternative A

There would be no impacts on the Osgood ACEC from wild horse and burro management because the ACEC is not within an HMA or HA. There are also no WHB populations in the area of the Osgood ACEC.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

There would be no impacts from WHB management to the Pine Forest, Raised Bog, and Osgood ACECs because these ACEC boundaries are not within HMAs or HAs. A portion of the North Stillwater HMA is within the Stillwater ACEC. The least aggressive population control measures would be used in Alternative C, and the established AML would be higher. Fertility control measures would not be used, so WHB populations would increase within shorter timeframes. These spikes in population growth would increase soil compaction, trampling, and grazing in areas until animals are removed to achieve AML. Mitigation measures to protect WHB are the greatest under this alternative and would prohibit or limit certain uses in HMAs. Maintaining higher WHB populations would degrade some ACEC values in the short term.

Individual Effects under Alternative D

There would be no impacts from WHB management to the Pine Forest, Raised Bog, and Osgood ACECs because these ACEC boundaries are not within HMAs or HAs. A portion of the North Stillwater Herd Management Area is within the Stillwater ACEC. This alternative has more aggressive management actions to control WHB populations. Management actions to gather excess WHB to the low AML levels when populations exceed the upper AML limit would be emphasized. Also fertility control inhibitors would be used to slow population growth rates, so WHB populations would increase within longer timeframes. Impacts from population growth would gradually increase soil compaction, trampling, and grazing in areas until animals are removed to achieve AML. Impacts on ACECs values should be maintained under this alternative.

Effects from Wildland Fire Management

Effects Common to All Alternatives

The BLM would develop and implement a response to wildfires, based on social, legal, and ecological consequences of the fire, to guide the suppression of fires. Wildfire suppression would prevent catastrophic destruction of vegetation and would preserve ACEC values over the long term. Fuels management also would protect ACEC values over the long term through the construction of fuel breaks. Emergency stabilization and rehabilitation management would stabilize and rehabilitate areas burned within ACECs, allowing for improvement in ecosystem health in the long term that has been damaged by wildland fire.

Individual Effects under Alternative A

Prescribed fire and other fuel break treatments would be implemented, as needed, to protect the sensitive Osgood mountain milkvetch.

Individual Effects under Alternative B

The impacts on the Osgood Mountain milkvetch ACEC are the same as those under Alternative A. However, this Alternative identifies 110,167 acres for allowing fire for resource benefit.

Individual Effects under Alternative C

There would be no beneficial effects from allowing fire, as described under Alternative D.

Constructing fuel breaks would be limited to using biological and mechanical treatments only. Fuel breaks to protect ACEC values would be less effective compared to other treatment methods. ES&R treatments would be limited to seeding with native species. Generally these species take longer to establish, thereby leaving burned areas more susceptible to erosion in the short term. Establishing native vegetation would improve rangeland health in the long term.

Individual Effects under Alternative D

Allowing fire for resource benefit may occur in 2,260 acres of the Pine Forest ACEC and 3,081 acres of the Stillwater ACEC when it would benefit forest and vegetation community health. These actions would improve ecosystem health and would protect the special qualities associated with the designations of the ACECs.

Fuel breaks would not be limited to certain treatment methods. Protection of ACEC values would be more effective in areas based on opportunities for multiple fuel break treatment methods. ES&R treatments would not be limited to seeding with native species. Using both natives and nonnatives would expedite establishment of vegetation and would reduce short-term erosion.

Effects from Cultural Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from cultural resource management.

Individual Effects under Alternative A

Few, if any impacts would occur from cultural resource management to the Osgood Mountain milkvetch ACEC. Implementation of SOPs, BMPs, and mitigation measures may limit location of certain uses within the ACEC, while protecting cultural resources and maintaining ACEC values.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on the Osgood, Raised Bog, and Pine Forest ACECs are similar to those described under Alternative A. The Stillwater ACEC would include management actions that would prohibit woodland product harvesting in order to protect special cultural values associated within this area. Mitigation measures would be developed for the Pine Forest ACEC to protect aspen carvings, which would also maintain ACEC wildlife habitat values.

Individual Effects under Alternative D

Impacts on the Osgood, Raised Bog, and Pine Forest ACECs are similar to those described under Alternative A. The Stillwater ACEC would restrict woodland harvesting, subject to implementation of SOPs, BMP, and mitigation measures. Uses may be limited within the ACECs to protect cultural resources and maintain ACEC values.

Effects from Tribal Consultation

Effects Common to All Alternatives

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This could limit the location of ground disturbance and other uses and maintain and improve ACEC values over the long term in certain areas.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect areas within ACEC boundaries.

Effects from Visual Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from visual resources management.

Individual Effects under Alternative A

The BLM would manage visual resources subject to VRM classification established in the Paradise-Denio and Sonoma-Gerlach MFPs. The Osgood Mountain ACEC would continue to be managed as

VRM Class IV. Changes may subordinate character but must reflect what could be a natural occurrence under class IV. The landscapes within the ACEC would continue to manage structure locations and to blend colors, line, and contrast in order to maintain scenic qualities within the ACEC.

Individual Effects under Alternative B

The BLM would manage the Osgood Mountain ACEC and associated landscapes as VRM Class II. Under Class II, changes should not be evident. Uses and facilities would be managed to blend with the surrounding landscapes. Changes may subordinate the character of the setting but must reflect what could be a natural occurrence. More mitigation measures would be implemented so that activities or structures would have fewer scenic impacts which would maintain the visual character of the Osgood Mountain ACEC.

Individual Effects under Alternative C

The BLM would manage all ACECs and associated landscapes as VRM Class II. The impacts would be similar to those described under alternative B. The visual character of all the ACECs would be maintained. Mitigation measures would be developed and implemented in order to blend or locate facilities to the surrounding landscape for all ACECs.

Individual Effects under Alternative D

Impacts are the same as those under Alternative B.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Managing livestock and maintaining land health standards should protect soils and vegetation from overgrazing, thereby maintaining ACEC values. Authorizing range improvements would allow for better management of livestock and would protect areas from overgrazing.

Individual Effects under Alternative A

The BLM would continue to allow livestock grazing and range improvements in the Osgood Mountain ACEC. Mitigation measures would be developed and implemented to protect sensitive plant species.

Individual Effects under Alternative B

The impacts on the Osgood Mountain ACEC are the same as those under Alternative A.

Individual Effects under Alternative C

Option 1

All ACEC areas would continue to be available for grazing. Achieving land health standards would protect wildlife habitat and cultural values, as well as scientific and sensitive plant areas, from excessive grazing. More restrictions would be applied when developing livestock waters, which would effect disbursement of livestock and provide benefits to wildlife habitat. The ACEC values that the designations are intended to protect would be maintained.

Option 2

No grazing would be allowed in ACECs under Alternative C, Option 2. By preventing livestock use, impacts from grazing to vegetation and soils would not occur and could improve natural habitat conditions in the areas of the ACECs in the short term. Long-term fuel buildup may make areas within ACECs more vulnerable to wildland fire.

Individual Effects under Alternative D

The impacts on the Osgood Mountain ACEC are the same as those under Alternative A. The impacts on the Pine Forest, Raised Bog, and Stillwater ACECs are the same as those under Alternative C, Option 1.

Effects from Minerals Management

Effects Common to All Alternatives

Impacts on ACEC values could result from fluid, leasable, and locatable mineral development and mineral material sales or disposal. Impacts associated with these actions include increased human presence, machinery, noise, loss or injury to plants and soils due to excavation or trampling, disturbance from mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction necessary for mineral development and use of access roads. Special status species habitat would be mitigated or avoided, which would protect ACECs.

RFDs

A reasonably foreseeable development scenario was developed with respect to future oil and gas and geothermal leasing (see Mineral Assessment Report, May 2006). Future actions based on reasonable development could result in indirect impacts. Future exploration and development scenarios could involve new structures, roads, infrastructure, and operations. These new structures, roads, and operations would not be located within the Osgood ACEC because of the no surface occupancy stipulations.

Individual Effects under Alternative A

Salable

The Osgood Mountain ACEC would be closed to mineral material disposal, which would protect the ACEC from mineral material activities.

Fluids

Fluid mineral development would be limited to no surface occupancy stipulation within the Osgood ACEC, which would protect sensitive plants.

Solid

Solid mineral leasing and development would be allowed in the Osgood ACEC subject to development and implementation of mitigation measures to protect sensitive plants. There is a low probably of solid mineral resources within the Osgood ACEC.

Locatable

Locatable mineral development would be allowed in the Osgood ACEC, subject to development and implementation of mitigation measures and authorization stipulations necessary to protect sensitive plants. Impacts could be extensive, based on the amount or degree of surface disturbance from exploration and mine development.

Individual Effects under Alternative B

Salable

Impacts are the same as those under Alternative A.

Fluid

The Osgood Mountain ACEC would be closed to leasing, and there would be no surface occupancy. This would protect the special qualities of the ACEC from fluid mineral activities.

Solid

There would be no surface occupancy for solid mineral development in the Osgood Mountain ACEC because the ACEC would be within a two-mile radius of known sensitive plants. This would protect the special qualities of the ACEC from solid mineral development activities.

Locatable

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Salable

ACECs would be closed to mineral material disposal, which would protect the special qualities of the ACECs from mineral material activities.

Fluid

The Osgood Mountain, Pine Forest, Raised Bog, and Stillwater ACECs would be closed to leasing, which would protect the special qualities of the ACECs from fluid mineral activities.

Solid

The Osgood Mountain, Pine Forest, Raised Bog, and Stillwater ACECs would be closed to solid mineral development. This would protect the special qualities of the ACECs from solid mineral development.

Locatable

Under Alternative C, the Osgood Mountain, Pine Forest, Raised Bog, and Stillwater ACECs would continue to be open, subject to stipulations and mitigation measures applicable to locatable mineral development. These ACECs are identified for potential withdrawal from locatable mineral development. Locatable mineral development could make the ACECs more susceptible to harming the special qualities of the areas. These impacts are not expected to occur if the ACECs are withdrawn from locatable mineral development.

Individual Effects under Alternative D

Salable

The impacts from mineral material disposal actions are the same as those under Alternative C.

Fluid

The impacts from fluid mineral leasing on ACECs are the same as those under Alternative C.

Solid

The impacts from solid mineral development on ACECs are the same as those under Alternative C.

Locatable

Impacts are the same as those under Alternative C.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, such as ACECs. Specific sites would be subject to NEPA analysis to minimize impacts on ACECs.

Individual Effects under Alternative A

Under Alternative A, the Osgood Mountain ACEC would continue to be designated as open to OHV use. Unrestricted OHV travel could cause deterioration of the special qualities used to designate this ACEC by disturbing sensitive plant species. The remote Osgood ACEC is not a popular dispersed recreation use area, so impacts are expected to remain low unless recreation use increases.

Individual Effects under Alternative B

The impacts from OHV use designations are similar to those under Alternative A. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Individual Effects under Alternative C

Under Alternative C, all ACECs would be designated as limited for OHV use. This would afford greater protection for the special qualities used to designate the area as an ACEC by reducing the opportunities for scarring the terrain and disturbing vegetation, causing associated erosion from OHV use. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Individual Effects under Alternative D

The impacts from OHV use designations are the same as those under Alternative C for travel management. Under this alternative, the Pine Forest SRMA is within the Pine Forest ACEC. More facilities could be developed, which could increase recreation visitation within the ACEC. Dispersed recreation impacts include more travel along existing roads and damage to wildlife habitat due to soil compaction and vegetation trampling. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Effects from Renewable Energy Management

Effects Common to All Alternatives

There are no effects common to all alternatives from renewable energy management.

Individual Effects under Alternative A

The Osgood ACEC would continue to be closed to wind energy development. Sensitive plant species would be protected from wind energy exploration and development.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Wind energy would be allowed in the ACECs. Permit restrictions, stipulations, and mitigation measures would be developed and implemented to protect ACEC resources. Areas within the Pine Forest ACEC would be excluded from wind energy because of ROW exclusion areas that overlap the ACEC boundary. These areas would protect ACEC wildlife habitat from discretionary renewable energy ROW actions.

Individual Effects under Alternative D

Wind energy would be allowed in the ACECs. Permit restrictions, stipulations, and mitigation measures would be developed and implemented to protect ACEC resource values. Areas within the Pine Forest ACEC would be identified as avoidance areas, which would constrain renewable wind energy development. ROW issuance would be restricted on a case-by-case basis. The avoidance areas would protect ACEC wildlife habitat from discretionary ROW actions.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression and public safety would allow for increased human presence, noise, and access to certain areas, which could degrade ACEC values. However, roads would allow for suppression of wildfires when necessary, which would protect native vegetation and ACECs over the long term.

Vegetation improvement actions, such as noxious weed control measures, would have impacts similar to those described under Methods and Assumptions at the beginning of this section.

Individual Effects under Alternative A

Minimizing the spread of noxious weeds along roadways would help protect the sensitive plants within the Osgood ACEC. Transportation actions to minimize effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and habitat and would prevent weed invasion or spread from road or trail construction. This would protect ACEC values in these areas over the long term.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Travel management includes limiting access into areas by implementing a road and trail closure policy, including rerouting roads and trails to protect ACEC values or reduce adverse impacts on resources. Implementing mitigation measures and weed abatement would reduce the potential for adverse impacts on ACEC values and would prevent noxious weed establishment and spread.

Individual Effects under Alternative D

Alternative D would remove or reroute trails within the ACECs to minimize effects on sensitive plant species habitat, critical wildlife habitat areas, and cultural and scientific areas. Implementation of mitigation measures and weed abatement would reduce the potential for adverse impacts on ACEC values and would prevent noxious weed establishment and spread.

Effects from Lands and Realty Management

Effects Common to All Alternatives

There are no areas identified within ACEC boundaries that would be suitable for disposing of public lands. Developing and implementing mitigation measures would reduce impacts on ACEC values.

Individual Effects under Alternative A

ROWs would be allowed within the Osgood ACEC subject to implementation of permit stipulations, BMPs, and mitigation measures to protect sensitive plant species. Development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The Pine Forest ACEC would be designated as an exclusion area, which would help protect special resources from development and disturbance. ROWs would not be allowed in order to protect wildlife habitat values. ROWs would be allowed within the other ACECs, subject to implementation of permit stipulations, BMPs, and mitigation measures to protect ACEC values. Development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Individual Effects under Alternative D

No new communication sites would be allowed in ACECs. This would protect the special qualities of the ACECs from development, operations, and maintenance activities associated with communication sites.

The Pine Forest ACEC would be designated as an avoidance area, which would help protect special resources from development and disturbance by limiting the type of ROWs that would be allowed on a case–by-case basis. ROWs would be allowed within the other ACECs, subject to implementation of permit stipulations, BMPs, and mitigation measures to protect ACEC values. Development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

ACECs would be managed to protect ACEC values that these areas were nominated for. More intensive implementation of permit stipulations, BMPs, and mitigation measures would be required to protect ACEC values.

Individual Effects under Alternative A

The BLM would continue to maintain the Osgood Mountain milkvetch ACEC so as to protect the species. The ACEC would continue to be closed to mineral material disposal (salables), open to fluid

mineral leasing with NSO, open to solid mineral leasing with standard stipulations, and withdrawn from locatable minerals entry. There would be no new impacts.

Individual Effects under Alternative B

The impacts from ACEC designation are the same as those under Alternative A.

Individual Effects under Alternative C

The BLM would continue to maintain the 60-acre Osgood Mountain milkvetch ACEC for protection of the species. There would be no new impacts on the special qualities of the area of the ACEC because the designation would not change. The BLM would also designate the Pine Forest, Raised Bog, and Stillwater ACECs. The special qualities associated with these areas would gain additional protection from disturbances by being designated ACECs.

The ACECs would be managed as follows:

- Closed to mineral material disposal (salables);
- Closed to fluid mineral leasing;
- Closed to solid mineral leasing;
- Withdrawn from locatable minerals entry.

Closure and withdrawal would protect the special qualities associated with these areas from degradation from activities associated with mineral development.

Individual Effects under Alternative D

The impacts from ACEC designation are the same as those under Alternative C. Additionally, the Pine Forest, Stillwater, and Raised Bog will be open for acquiring the rights to locatable minerals with special mitigation on operations. Opening the Pine Forest, Stillwater, and Raised Bog ACECs for acquiring the rights to locatable minerals with special mitigation on operations could threaten the special qualities associated with these areas from degradation from activities associated with mineral development. Also, the ACECs would be closed to any new communication sites. Closure to communication site development would protect the special qualities associated with these areas from degradation from activities associated with communication site development.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from National Trails Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect ACECs.

Cumulative Effects

Past actions and events contributing to cumulative effects within or adjacent to ACECs have resulted primarily from surface-disturbing activities and population growth.

Use of natural resources within the WDO planning area is expected to remain at current or slightly increased levels. As a result, surface-disturbing activities affecting ACECs could continue. However, the BLM would maintain discretionary authority over most land uses and would permit only those actions that would not impair or conflict with ACECs, reducing cumulative effects on these areas. As the population increases, activity and use within or adjacent to ACECs increases. An increasing population could continue to build housing closer to ACECs, thereby affecting the quality of natural and cultural resources in ACECs.

4.4.2 Wild and Scenic Rivers

Summary

In general, Effects Common to All Alternatives involve actions that maintain or improve the qualities of areas with special designations. Administrative designations addressed in this section include eligible river segments that are suitable or unsuitable under the Wild and Scenic River Act

(WSR) of 1968. Eligible river segments for WSR assessment were identified in the WSR report (BLM 2006).

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In the absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in BLM management to protect WSR areas;
- The proposed management prescribed for an area with a special designation would protect the qualities that are associated with the special designation for the area;
- Activities proposed that would not initially meet objectives for areas with special designations would be mitigated to the extent needed to meet the objectives; and
- Fuel treatments would reduce fuel loads and decrease the risk of catastrophic fire that would destroy vegetation WSR values. Actions to limit vegetation treatments could prevent ecosystem health improvements in the long term but would minimize disturbance to certain areas in the short term.

Effects from Air Quality Management

Effects Common to All Alternatives

Air quality protections would benefit ecosystems by reducing air pollution and maintaining outstanding remarkable values.

Individual Effects under Alternative A

There would be no impacts on WSRs from air quality management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under alternative A.

Individual Effects under Alternative C

The BLM would comply with air quality regulations and use smoke modeling for prescribed fire. Compliance with air quality regulations and following smoke modeling forecasts would reduce impacts from smoke and dust to air quality and would reduce air quality impacts on outstanding remarkable values.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Geology Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Soil Resources Management

Effects Common to All Alternatives

Soil erosion reduction measures, including seeding and improving vegetative cover, would reduce compaction, would increase infiltration, and would improve ecosystem health over the short term. These impacts could extend into long-term benefits from increased vegetative productivity and improved habitat connectivity. All of these effects would help to enhance WSRs values.

Individual Effects under Alternative A

There would be no impacts on WSRs from air quality management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Mitigation measures to reduce soil erosion would be developed in order to protect and maintain Outstandingly Remarkable Values and water quality.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from water resources management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Mitigation measures could limit or restrict uses within designated corridors to protect water quality and quantity and outstanding remarkable values.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Vegetation – Forest/Woodland Products Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from forest and woodland management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Areas within WSR corridors containing woodlands would be protected by developing mitigation measures to ensure outstanding remarkable values are maintained. Overall stand health would improve slowly overtime as treatments would be limited to mechanical or biological treatments.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Individual Alternative Effects from Vegetation – Weeds Management

Effects Common to All Alternatives

Actions to decrease weeds on BLM-administered lands would improve ecosystem health and habitat values by increasing native species in both the short term and long term. Weeds actions would have impacts similar to those described under Methods and Assumptions, above.

Individual Effects under Alternative A

There would be no impacts on WSRs from weed management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Short-term control methods would be limited to mechanical and biological treatments. However, mechanical treatments may be restricted, based on impacts on outstanding remarkable values. Weed abatement may take much longer to become effective.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Vegetation – Rangeland Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from vegetation-rangeland management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Option 1

Vegetation management would include rehabilitation of areas disturbed or burned. These actions would stabilize areas, would deter establishment of weeds, and would allow for long-term reestablishment of native plant communities within WSR corridors. Vegetation manipulation to include biological and mechanical treatments would protect outstanding remarkable values from wildland fire and improve vegetative health in areas.

Option 2

No grazing within WSR corridors would improve water quality in areas because more vegetation would be available to filter sediment along streams. However, fuel loads would increase, making WSR corridors more vulnerable to wildland fire.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Vegetation – Riparian and Wetlands Management

Effects Common to All Alternatives

Improving PFC within WSRs would improve functioning conditions of riparian and wetland areas and would improve riparian vegetation health.

Individual Effects under Alternative A

There would be no impacts on WSRs from riparian and wetlands management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Fish habitat management actions include maintaining and improving lentic and lotic fish habitat, including monitoring aquatic and riparian habitat conditions. Implementing BMPs and SOPs would reduce adverse impacts on fish habitat areas within WSR corridors.

Wildlife management actions include improving and protecting waterfowl habitats, protecting migratory birds and their nests, and maintaining and enhancing wildlife habitat. Implementing BMPs and SOPs would reduce adverse impacts and improve wildlife habitat. Direct impacts on migratory birds are anticipated to be low due to requirements for pre-disturbance inventories and implementation of seasonal use restrictions or avoidance of nests.

Individual Effects under Alternative A

There would be no impacts on WSRs from wildlife and fish management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Mitigation measures and BMPs would be implemented to achieve desired wildlife population and habitat conditions, ultimately reducing adverse impacts on outstanding remarkable values. Management actions to limit stream bank alteration should improve stream bank channel stability, which would maintain habitat segments containing LCT and other fisheries. Wildlife within tentatively eligible, suitable streams would be constrained to existing water sources. There would be no impacts from fisheries management within the Osgood, Stillwater, and Raised Bog ACECs.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Special Status Species Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from sensitive species management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Alternative C places the greatest amount of restrictions on activities that occur near special status species and their habitats in order to protect sensitive species. This would protect outstanding remarkable values established within certain WSR segments.

Individual Effects under Alternative D

Impacts from these actions are similar to those described under Alternative A.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Managing wild horses and burros within HMAs and HAs would include controlling horse and burro populations based on AML. Controlling herd size would limit and reduce the potential for overgrazing areas. Population control measures would reduce the impact of WHB on lands by decreasing the risk of soil compaction, trampling, and the introduction or spread of weeds. This would help maintain ecosystem health and outstanding remarkable values.

Individual Effects under Alternative A

There would be no impacts on WSRs from wild horse and burro management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

WHB management would have minimal, if any, impacts because tentative eligible segments are not located within HMAs or HAs.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Wildland Fire Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from wildland fire management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Constructing fuel breaks would protect outstanding remarkable values. Mitigation measures, BMPs, and SOPs to prevent impacts on outstanding remarkable values would be implemented. Use of retardant would be restricted within stream segments, protecting water quality.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Cultural Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from cultural resources management because no tentative eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Implementing SOPs, BMPs, and mitigation measures may limit location of certain uses within the WSR segments, while protecting cultural resources and maintaining outstanding remarkable values.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Tribal Consultation

Effects Common to All Alternatives

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This could limit the location of ground disturbance and other uses and maintain and improve values over the long term in certain areas.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect areas within WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Visual Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from VRM management because there would be no tentatively eligible, suitable streams under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Segments would be managed under VRM Class II, wherein changes should not be evident. Uses and facilities within WSR corridors would be managed to blend with the surrounding landscapes. Changes may subordinate the character of the setting but must reflect what could be a natural occurrence. More mitigation measures would be implemented so that activities or structures would have fewer scenic impacts and would maintain the visual character of the outstanding remarkable values.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from livestock grazing management because there would be no tentatively eligible, suitable streams under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Option 1

Areas within the WSR corridors would continue to be available for grazing. Achieving Land Health Standards would protect outstanding remarkable values from excessive grazing.

Option 2

By preventing livestock use, impacts on vegetation and soils from grazing would not occur and could improve outstanding remarkable values in the short term. Long-term buildup of fuels may make areas within WSR corridors more vulnerable to wildland fire.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Minerals Management

Effects Common to All Alternatives

WSRs

Impacts on outstanding remarkable values could result from fluid, leasable, and locatable mineral development and mineral material sales or disposal. Impacts associated with these actions include increased human presence, machinery, noise, loss or injury to plants and soils from excavation or trampling, disturbance from mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction of facilities necessary for mineral development and use of access roads.

Special status species habitat would be mitigated or avoided, which would protect outstanding remarkable values in areas.

RFDs

A reasonably foreseeable development scenario was developed with respect to future oil and gas and geothermal leasing (see Mineral Assessment Report, May 2006). Future actions based on reasonable development could result in indirect impacts. Future exploration and development scenarios could involve new structures, roads, infrastructure, and operations. These new structures, roads, and operations would not be located within the Osgood ACEC due to no surface occupancy stipulations.

Individual Effects under Alternative A

Salable

There would be no impacts on WSRs from salable mineral management as no tentative eligible streams would be suitable under this alternative.

Fluids

There would be no impacts on WSRs from fluids management because no tentatively eligible streams would be suitable under this alternative.

Solid

There would be no impacts on WSRs from solid mineral management because no tentatively eligible streams would be suitable under this alternative.

Locatable

There would be no impacts on WSRs from locatable mineral management because no tentatively eligible streams would be suitable under this alternative.

Individual Effects under Alternative B

Salable

Impacts are the same as those under Alternative A.

Fluid

Impacts are the same as those under Alternative A.

Solid

Impacts are the same as those under Alternative A.

Locatable

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Salable

Salable mineral disposal would be allowed within WSR segments, subject to development and implementation of mitigation measures and stipulations to protect outstanding remarkable values. The segment of the North Fork of the Little Humboldt within a quarter mile of the Little Humboldt WSA would be closed to mineral material disposal.

Fluid

Fluid mineral development would be allowed within WSR segments, subject to development and implementation of mitigation measures and stipulations to protect outstanding remarkable values. The segment of the North Fork of the Little Humboldt within a quarter mile of the Little Humboldt WSA would be closed to fluid mineral leasing.

Solid

Solid mineral development would be allowed within WSR segments, subject to development and implementation of mitigation measures and stipulations to protect outstanding remarkable values. The segment of the North Fork of the Little Humboldt within a quarter mile of the Little Humboldt WSA would be closed to fluid mineral leasing.

Locatable

Tentative eligible segments would be open for locatable mineral development, subject to implementation of mitigation measures or permit authorizations. Locatable mineral development could make the WSRs more susceptible to harming the outstanding remarkable values.

Individual Effects under Alternative D

Salable

Impacts are the same as those under Alternative A.

Fluid

Impacts are the same as those under Alternative A.

Solid

Impacts are the same as those under Alternative A.

Locatable

Impacts are the same as those under Alternative A.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from recreation management because there would be no tentatively eligible, suitable streams under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

WSR segments would be designated as limited to OHV use. This would afford greater protection of the outstanding remarkable values by limiting OHVs and associated dust. To minimize impacts caused by OHV use, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Renewable Energy Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from renewable energy management because there would be no tentatively eligible, suitable streams under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Rights-of-way would occur within WSR corridors that do not overlap with avoidance or exclusion realty areas. The outstanding remarkable values would be protected from discretionary renewable energy realty actions. Other impacts would be reduced, subject to implementation of mitigation measures or permit stipulations.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression and public safety would allow for increased human presence, noise, and access to certain areas, which could degrade WSR values. However, roads would allow for suppression of wildfires when necessary, which would protect native vegetation and WSR corridors over the long term.

Vegetation improvement actions, such as noxious weed control measures, would have impacts similar to those described under Methods and Assumptions, at the beginning of this chapter.

Individual Effects under Alternative A

There would be no impacts on WSRs from transportation and access management because there would be no tentatively eligible, suitable streams under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Travel management would include limiting access into areas by implementing a road and trail closure policy, including rerouting roads and trails to protect ORV or reduce adverse impacts on resources within WSR corridors. Implementing mitigation measures to protect outstanding remarkable values and weed abatement would reduce the potential for adverse impacts on outstanding remarkable values and would prevent noxious weed establishment and spread.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Lands and Realty Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts on WSRs from lands and realty management because there would be no tentatively eligible, suitable streams under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

There are no proposed areas identified suitable for disposal within WSR corridors. ROWs would be allowed within WSR corridors, subject to implementation of permit stipulations, BMPs, and mitigation measures to protect outstanding remarkable values. Development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There would be no impacts from WSR management because there would be no tentatively eligible, suitable streams under this alternative.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Development of permit stipulations, BMPs, and mitigation measures would increase public user costs in order to protect outstanding remarkable values.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from National Trails Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

The BLM would protect eligible river segments in accordance with tentative suitability classifications for the North Fork of the Little Humboldt, Washburn Creek, and Crowley Creek. This would protect the outstanding remarkable values of eligible river segments identified in the WSR report (BLM 2006).

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSRs.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Cumulative Effects

Past actions and events contributing to cumulative effects within or adjacent to rivers have resulted primarily from surface-disturbing activities and population growth.

Use of natural resources within the WDO planning area is expected to remain at current or slightly increased levels. As a result, surface-disturbing activities affecting rivers could continue. However, the BLM would maintain discretionary authority over most land uses and would permit only those actions that would not impair or conflict with river systems, reducing cumulative effects on these areas. As the population increases, activity and use within or adjacent to rivers increases. An increasing population could continue to build housing closer to rivers, thereby affecting the quality of natural and cultural resources near rivers.

4.4.3 Backcountry Byways

Summary

In general, the effects common to all alternatives involve actions that maintain or improve the qualities of backcountry byways (BCB). Specific actions to achieve this are associated with the management of rangeland vegetation, wild horses and burros, wildland fire, cultural resources, visual resources, livestock grazing, minerals, recreation and visitor outreach and services, renewable energy, transportation and access, lands and realty, and backcountry byways. In general, any actions that would change the visual or aesthetic character of the landscape surrounding the BCB would have impacts on the quality of the BCB.

Under Alternative A, the BLM would continue to rely on dated management framework plans to manage the Lovelock Cave BCB. Designation of new BCBs would be considered. An increasing population and increasing demand for recreation opportunities threaten the landscape surrounding the Lovelock Cave BCB and other potential BCBs because the management framework plans lack management actions for these areas.

In absolute terms, Alternatives C and D would have similar impacts on BCBs, with some exceptions. Alternative C would provide additional protection to the landscape surrounding existing and potential BCBs because it would protect the areas from livestock damage, such as trampled vegetation. Compared to Alternatives C and D, Alternative B would provide less than half of the opportunities for protecting the special resources associated with BCBs.

In relative terms, Alternatives B, C, and D differ in their degree of impact on existing and potential BCBs. The differences in degree of impact on BCBs are detailed below under each alternative.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- The scenic value of BCBs is directly related to the aesthetic and visual character of the landscape surrounding the byways;
- There would be an increase in use of BLM-administered land;
- The proposed management prescribed for a BCB would protect the qualities that are associated with the BCB;
- Any new surface-disturbing activities would be subject to NEPA conformance; and
- Activities proposed that would not initially meet objectives for BCBs would be mitigated to the extent needed to meet the objectives.

Effects from Air Quality Management

Effects Common to All Alternatives

There are no impacts because there are no air quality management actions that are likely to affect BCBs.

Effects from Geology Management

Effects Common to All Alternatives

There are no impacts because there are no geology management actions that are likely to affect BCBs.

Effects from Soil Resources Management

Effects Common to All Alternatives

There are no impacts because there are no soil resources management actions that are likely to affect BCBs.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no impacts because there are no water resources management actions that are likely to affect BCBs.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

There are no impacts because there are no forest vegetation management actions that are likely to affect BCBs.

Individual Alternative Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

The BLM would continue to minimize the spread of weeds so that native vegetation could thrive. This would promote a visual landscape with flora that is typical of the Great Basin and would improve the aesthetic value of BCBs throughout the WDO.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no impacts because there are no chemical and biological control actions that are likely to affect BCBs.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Vegetation treatments for range improvement projects would increase native rangeland vegetation throughout the WDO in the long term. These range improvements would result in minor and short-term disturbances to vegetation, including loss of vegetation cover and changes in plant composition adjacent to each project. Therefore, these range improvement projects would have a short-term impact on the visual character of the landscape surrounding BCBs but would improve the scenic values in the long term.

Post-fire rehabilitation efforts, including a prohibition against seeding and grazing, would reduce the ability for weeds to invade and would support native species growth. This would help to achieve healthy rangeland conditions in the long term and would improve scenic values in the landscape surrounding BCBs.

Individual Effects under Alternative A

Grazing management systems and practices would decrease fuel loads and would reduce the likelihood of catastrophic fire over large areas. Prescriptive grazing would be used, and if applied correctly, this could increase native vegetative cover and decrease weeds on rangelands, which would help to restore a natural fire regime. Such protections against catastrophic fire would preserve the scenic value of BCBs throughout the WDO in the long term.

Individual Effects under Alternative B

Grazing management systems and practices would have impacts similar to those described under Alternative A. Impacts would be greater by restoring CC to Class II levels on 70,000 acres, which would reduce fuel loads on these lands and would protect native vegetation from catastrophic fire.

Individual Effects under Alternative C

Option 1

Grazing management systems and practices would have impacts similar to those described under Alternative A. Restoring CC to Class II levels on 70,000 acres would have impacts similar to those described under Alternative B.

Option 2

Grazing would not be permitted under this option, which could make rangelands more susceptible to catastrophic fire because fuel loads would not be decreased through grazing. Large-scale catastrophic fire would lower the scenic value of adjacent backcountry byways. However, the impacts from restoring CC to Class II levels on 70,000 acres are similar to those described under Alternative B.

Individual Effects under Alternative D

The impacts from grazing management systems and practices are similar to those described under Alternative A. Restoring CC to Class II levels on 70,000 acres would have impacts similar to those described under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There are no impacts because there are no riparian and wetland management actions that are likely to affect BCBs.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

The BLM would continue to apply land health standards, SOPs, BMPs, use restrictions, or mitigation measures to all BLM and BLM-authorized activities to maintain and improve wildlife habitat. This would promote a visual landscape with fauna that is typical of the Great Basin, which would improve the scenic quality of BCBs throughout the WDO.

Effects from Special Status Species Management

Effects Common to All Alternatives

There are no impacts because there are no special status species management actions that are likely to affect BCBs.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Wild horse and burro management actions would impact vegetation because wild horses and burros may overuse vegetation adjacent to water sources, troughs, and livestock reservoirs, which results in a loss of plant cover. This would allow localized areas to become dominated by invasive plants. Vegetation recovery on a burned area could be slowed or reduced by wild horses and burros. All of these effects could impact BCBs by lowering the scenic value of the surrounding landscape.

The presence of wild horses and burros on the land would improve the scenic value of BCBs.

Individual Effects under Alternative A

WHB population control measures would be greatest under this alternative, and AML would be converted between wild horse use and burro use. Conversion of AML would spread impacts on rangelands through time, as wild horses and burros have different habitat and forage preferences. These actions would lower the impact of WHB on the landscape, and the scenic value of BCBs would be improved within HMAs.

Individual Effects under Alternative B

Impacts from population control measures under Alternative B are similar to those under Alternative A. However, under Alternative B, AML would not be converted between wild horse use and burro use, which would impact rangeland health by concentrating WHB impacts, such as compaction, trampling, and weed spread within the HMAs. This would lower the scenic value of BCBs where they occur in HMAs.

Individual Effects under Alternative C

Alternative C would implement the fewest controls on WHB populations, which would cause the greatest impact from WHB on rangelands and would lower the scenic value of BCBs. Impacts from conversion of AML between wild horse use and burro use are similar to those described under Alternative A.

Individual Effects under Alternative D

Impacts from population control measures and conversion of AML between wild horse use and burro use are similar to those described under Alternative A.

Effects from Wildland Fire Management

Effects Common to All Alternatives

There are no impacts because there are no wildland fire management actions common to all alternatives that are likely to affect BCBs.

Individual Effects under Alternative A

Alternative A does not identify areas for allowing fire for resource benefit. There would continue to be no requirements for the BLM to use wildland fire to provide resource benefits. Consequently, the impacts on visual resources identified under Alternative B would not occur.

Individual Effects under Alternative B

The BLM would designate 110,167 acres suitable for allowing fire for resource benefit in order to provide resource benefits. Using wildland fire to provide resource benefits assumably would promote healthy habitat native to the Great Basin. Consequently, allowing fire for resource benefit would promote a landscape with flora that is typical of the Great Basin, which would improve the scenic value of BCBs throughout the WDO in the long term. However, after an area had been burned, there would be short-term impacts on the landscape, including scorched terrain and vegetation, until native vegetation recolonized burned areas.

Individual Effects under Alternative C

The impacts on BCBs from wildland fire management are the same as those under Alternative A.

Individual Effects under Alternative D

The BLM would designate 9,932 acres suitable for allowing fire for resource benefit in order to provide resource benefits. Impacts are similar to those described under Alternative B, although impacts under Alternative D would be less because fewer acres would be designated under Alternative D.

Effects from Cultural Resources Management

Effects Common to All Alternatives

There are no impacts because there are no cultural resource management actions common to all alternatives that are likely to affect BCBs.

Individual Effects under Alternative A

Alternative A does not specify a VRM class for the viewshed of the Lovelock Cave BCB. As a result, activities could occur in the viewshed that could alter the scenic landscape along the Lovelock Cave BCB.

Individual Effects under Alternative B

The BLM would protect the viewshed of the Lovelock Cave BCB by managing the viewshed to VRM III. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave BCB because there are no standards against which to manage the scenic landscape. Proponents of actions in the viewshed would be required to partially retain the landscape character.

Individual Effects under Alternative C

The BLM would protect the viewshed of the Lovelock Cave BCB by managing the viewshed to VRM II. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave BCB because there are no standards against which to manage activities that alter the scenic landscape. Proponents of actions in the viewshed would be required to retain the landscape character, which is a higher standard than partially retaining the landscape character.

Individual Effects under Alternative D

The impacts on visual resources with respect to the Lovelock Cave BCB are the same as those under Alternative C.

Effects from Tribal Consultation

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Visual Resources Management

Effects Common to All Alternatives

Implementing VRM guidelines would maintain the visual character of the landscape in certain areas, which would increase the scenic value of BCBs in these areas.

Individual Effects under Alternative A

Under Alternative A, 420,271 acres and 346,302 acres would be managed to VRM Class I and II guidelines, respectively. These actions would improve the scenic value of BCBs in these areas.

Individual Effects under Alternative B

Under Alternative B, 417,605 acres and 391,203 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the least restrictive to changes in the visual character of the landscape. Impacts are similar to those described under Alternative A.

Individual Effects under Alternative C

Under Alternative C, 417,605 acres and 3,083,211 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the most restrictive to changes in the visual character of the landscape. Impacts are similar, although greater in magnitude, than under Alternative A.

Individual Effects under Alternative D

Under Alternative D, 417,605 acres and 2,780,416 acres would be managed to VRM Class I and II guidelines, respectively. Impacts are most similar in nature and magnitude to Alternative C.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

There are no effects common to all alternatives from livestock grazing management.

Individual Effects under Alternative A

Impacts from livestock grazing are usually related to a long duration of use during the growing season, resulting in lower vigor of desired species and a change in species composition. Often, the vegetation is disturbed around salting areas, bed grounds, troughs, and stock reservoirs, and there is a loss of plant cover, which usually results in localized areas dominated by invasive plants. Further, degraded rangeland that is grazed yearly lacks substantial native vegetation to outcompete invaders. This affects the visual character of the landscape surrounding BCBs and reduces the byways' scenic values.

Livestock grazing would be open on 8,232,727 acres of land under this alternative, which would have the greatest impact on the visual character of the landscape and thus on BCBs. Impacts could occur as described above, but actions under Alternative A must maintain and improve rangeland in accordance with the Standards for Rangeland Health, which would minimize impacts on the landscape and on BCBs. Range improvement actions would help increase native vegetation and decrease the number and extent of weed populations, which would improve the visual character of the landscape in the long term. These actions would be difficult to implement successfully and efficiently under Alternative A, due to the large acreage that would be open to grazing.

Lands closed to grazing on the remainder of land in the WDO would lower impacts on the landscape in these areas. This would have a beneficial impact on the scenic value of BCBs.

Individual Effects under Alternative B

Livestock grazing would be open on 8,232,727 acres of land under this alternative. Grazing, including that on acquired lands, allowing temporary nonrenewable use, and allowing for continuous season-long use, would facilitate the most intensive land use. Impacts are similar to those described under Alternative A.

Range improvement actions and lands closed to grazing on the remainder of land in the WDO would have impacts similar to those described under Alternative A.

Individual Effects under Alternative C

Option 1

Livestock grazing would be open on 8,038,084 acres of land under this alternative. Grazing would have impacts similar to those described under Alternative A. However, Alternative C, Option 1 would not allow grazing on acquired lands or temporary nonrenewable use and would only allow for two years of consecutive grazing during the critical growth period. This would minimize the intensity of land use and would foster rangeland health, thus improving the visual character of the landscape and the scenic value of BCBs.

Range improvement actions and lands closed to grazing on the remainder of land in the WDO would have impacts similar to those described under Alternative A.

Option 2

Livestock grazing would be closed on all lands within the WDO, so this alternative would be the most effective at reducing impacts on the landscape and thus on BCBs.

Individual Effects under Alternative D

Alternative D would have 8,016,754 acres of land open to grazing. Impacts are similar to those described under Alternative A, except with fewer acres of land open to grazing.

Impacts from range improvements are similar to those described under Alternative A.

Effects from Minerals Management

Effects Common to All Alternatives

General

Minerals management impacts on BCBs could occur from disturbances that would affect the aesthetic character of the landscape surrounding the BCB. This includes surface disturbance, as well as disturbances from noise and movement from the exploration, construction, and operation of facilities and roads.

Salable

Impacts from salable minerals, typically gravel, tend to be small scale and localized. Impacts occur primarily from surface disturbance, but use restrictions and closures would minimize many impacts on the visual character of the landscape, which would minimize impacts on BCBs.

Fluid and Solid

Impacts from fluid and solid leasables are also typically small scale and localized, but cumulative effects can occur where there are numerous oil and gas wells over the landscape. Impacts within the WDO would be minimized by use restrictions and closures, which would minimize impacts on the scenic value of BCBs.

Locatable

Development of locatable mineral resources results in surface clearing performed for exploration. Reclamation of disturbed areas using proper seed mix can help mitigate the alteration of the visual character of the landscape, which would minimize impacts on the scenic value of BCBs as well.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists. The assumption is that reasonably foreseeable development actions that are incompatible with objectives, goals, and actions for BCBs would not be allowed, thereby protecting the special values of BCBs.

Individual Effects under Alternative A

Alternative A would open the greatest acreage and would close the least acreage to mineral development, thus having the greatest likelihood of impacting the visual character of the landscape and thus the scenic values of BCBs. Impacts are similar to those described under Effects Common to All Alternatives from Minerals Management.

Individual Effects under Alternative B

Compared with Alternative A, Alternative B would open fewer acres and would close more acres to mineral development, thus having less likelihood of impacting the scenic value of BCBs. Impacts are similar to those described under Effects Common to All Alternatives from Minerals Management.

Individual Effects under Alternative C

Alternative C would open the fewest acres and would close the most acres to mineral development, thus having the least likelihood of impacting the scenic value of BCBs of all alternatives. Impacts are similar to those described under Effects Common to All Alternatives from Minerals Management.

Individual Effects under Alternative D

Compared with Alternatives A and B, Alternative D would open fewer acres and would close more acres to mineral development, thus having less likelihood of impacting the scenic value of BCBs. Impacts are similar to those described under Effects Common to All Alternatives from Minerals Management.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

The BLM would continue to construct appropriate new facilities so as to be unobtrusive with local landscape settings. This would allow the public to use facilities during recreation that blend in with the surrounding landscape, which would minimize the impacts on the scenic value of BCBs.

Individual Effects under Alternative A

There would be no change in the designation of BLM-administered land for OHV use, so there would be no new impacts. Ongoing impacts, such as OHV use in visually sensitive areas, would continue. As a result, OHV use in the landscape surrounding the Lovelock Cave BCB could deteriorate by, for example, scarring the terrain and disturbing vegetation.

Individual Effects under Alternative B

Alternative B would decrease by 5,322,590 the number of acres designated as open for OHV use. As a result, disturbances to the landscape from motorized vehicles would likely decrease in these areas. Limited OHV use on 5,445,218 acres would reduce impacts from OHVs over the landscape. In all, impacts on potential BCBs would be lower than those under Alternative A. To minimize impacts further, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Impacts on the landscape surround the Lovelock Cave BCB are similar to those under Alternative A.

Individual Effects under Alternative C

Alternative C would increase the number of acres designated as closed for OHV use and would not allow any acres to be designated as open for OHV use. As a result, disturbances to the landscape from motorized vehicles would likely decrease. To minimize impacts further, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Alternative C would have the least impact on BCBs of all alternatives.

Individual Effects under Alternative D

Alternative D would increase the number of acres designated as closed for OHV use and would decrease the number of acres designated as open for OHV use compared with Alternative A. As a result, disturbances to the landscape from motorized vehicles would likely decrease. To minimize impacts further, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. This would reduce impacts on the scenic value of BCBs in these areas.

Effects from Renewable Energy Management

Effects Common to All Alternatives

There are no impacts because there are no renewable energy management actions common to all alternatives that would impact BCBs.

Individual Effects under Alternative A

Maintaining exclusion areas within the WDO would protect and limit disturbances to native vegetation and would prevent impacts on the landscape. This would have beneficial impacts on the scenic value of BCBs in these areas.

Individual Effects under Alternative B

Designating avoidance areas within the WDO provides some protection to the native vegetation across the landscape. This would have beneficial impacts on the scenic value of BCBs in these areas.

Individual Effects under Alternative C

Designating avoidance areas and exclusion zones within the WDO would have the greatest impact on the landscape by protecting and limiting disturbances to vegetation and soils and by preventing weed invasion or spread. This would have the greatest beneficial impacts on the scenic value of BCBs in these areas.

Individual Effects under Alternative D

Designating avoidance areas and exclusion zones within the WDO would have impacts similar to those described under Alternative C.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression would provide access to lands throughout the WDO and would allow for suppression of wildfires when necessary. This would help protect the landscape from catastrophic fire, which would protect the scenic value of BCBs in the long term.

Individual Effects under Alternative A

Transportation actions under Alternative A would not protect wildlife, sensitive species, or their habitat. As a result, lands throughout the WDO could be impacted by road and trail construction through vegetation removal, soil compaction, weed invasion, and increased dust, which would lower the scenic value of BCBs.

Individual Effects under Alternative B

Transportation actions to minimize the effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and soils and would prevent weed invasion or spread from road or trail construction or transport on vehicles. These actions would thus protect the visual character of the landscape and would improve the scenic value of BCBs.

Individual Effects under Alternative C

Transportation actions to minimize effects on wildlife, sensitive species, and habitat would have impacts similar to those described under Alternative B.

Individual Effects under Alternative D

Transportation actions to minimize effects on wildlife, sensitive species, and habitat are similar to those described under Alternative B.

Effects from Lands and Realty Management

Effects Common to All Alternatives

ROWs alter the landscape surrounding potential BCBs from their footprint for the facilities that are authorized. This is because they could cause removal of vegetation, soil compaction, weed invasion, and increased dust in these areas. Most of the footprints are localized and cover a small area, but ROWs tend to be linear and may stretch for miles.

Individual Effects under Alternative A

Issuance of ROWs would not be limited, and avoidance areas or exclusion zones for lands and realty management actions would not be designated under Alternative A. This could cause the greatest impact on the visual character of the landscape, thus impacting BCBs.

Individual Effects under Alternative B

The impacts from designating avoidance areas are similar to those described under renewable energy management actions under Alternative B. The impacts from issuing ROWs are similar to those described under Alternative A.

Individual Effects under Alternative C

The impacts from designating avoidance areas and exclusion zones are similar to renewable energy management actions under Alternative C.

Restricting ROW issuance would protect and limit vegetation disturbance, fragmentation, and weed invasion or spread from road construction. Impacts would occur on a landscape scale and would therefore impact the scenic value of BCBs.

Individual Effects under Alternative D

Effects from ACEC/RNA Management

Effects Common to All Alternatives

There would be no impacts because no ACEC/RNA management actions would affect BCBs.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

The BLM would continue to manage and enhance the Lovelock Cave BCB. There would be no new impacts.

Individual Effects under Alternative A

The BLM would continue to evaluate the opportunity and need for developing the Gold Country Byway, Silver BCB, and Blue Lakes-Knott Creek Byway. There would be no new impacts.

Individual Effects under Alternative B

Unlike Alternative A, which could involve the eventual designation of new byways (Gold Country Byway, Silver BCB, and Blue Lakes-Knott Creek Byway), the BLM would not consider new backcountry byways; therefore, Alternative B would not add to the number of miles of byways.

Individual Effects under Alternative C

The impacts from BCB management are the same as those under Alternative B.

Individual Effects under Alternative D

The impacts from BCB management are the same as those under Alternative A.

Effects from National Trails Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect BCBs.

Cumulative Effects

Past actions and events contributing to cumulative effects within or adjacent to areas with special designations have resulted primarily from surface-disturbing activities and population growth.

Use of natural resources within the WDO planning area is expected to remain at current or slightly increased levels. As a result, surface-disturbing activities affecting areas with special designations could continue. However, the BLM would maintain discretionary authority over most land uses and would permit only those actions that would not impair or conflict with areas with special designations, reducing cumulative effects on these areas. As the population increases, activity and use within or adjacent to areas with special designations increases. An increasing population could continue to build housing closer to areas with special designations, thereby affecting the quality of natural and cultural resources in areas with special designations.

4.4.4 Wilderness Study Areas and Lands with Wilderness Characteristics

Summary

In general, effects common to all alternatives involve actions that maintain or improve the qualities of WSAs or areas with wilderness characteristics. Specific actions to achieve this are associated with most resources.

Under Alternative A, the BLM would continue to rely on dated management framework plans to manage WSAs or areas with wilderness characteristics. These plans are silent on areas with wilderness characteristics. In addition, an increasing population and increasing demand for recreation opportunities further threaten areas with wilderness characteristics because these public resources lack management actions in the management framework plans.

In absolute terms, Alternatives C and D would have similar impacts on WSAs or areas with wilderness characteristics, with some exceptions. Alternative C, Option 2 would provide additional protection to WSAs or areas with wilderness characteristics because it would protect the areas from damage by livestock grazing, such as trampled vegetation. Compared to Alternatives C and D, Alternative B would provide fewer opportunities for protecting the special resources associated with these areas.

In relative terms, Alternatives B, C, and D differ in their degree of impact on WSAs or areas with wilderness characteristics. The differences in degree of impact on WSAs or areas with wilderness characteristics are detailed below under each alternative.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area, and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in use of BLM-administered land;
- The proposed management prescribed for an area designated as a WSA or an area with wilderness characteristics would protect the qualities that are associated with the area;
- Any proposed action within a WSA would be processed in accordance with the policies stated in the "Interim Management Policy For Lands Under Wilderness Review," in BLM Handbook H-8550-1; and
- Management actions that include vegetation treatment would indirectly foster wilderness characteristics over the long term by improving ecosystem health and vegetation composition, structure, and diversity. These would be implemented by removing weeds, increasing native vegetation, and managing for a certain plant community composition. Weed removal, in particular, would reduce fuel loads and decrease the risk of catastrophic fire that would destroy vegetation and wilderness characteristics. However, these actions also would directly reduce wilderness characteristics over the short term by increasing human presence, vehicles, road use, and noise. Actions to limit vegetation treatments could prevent ecosystem health improvements in the long term but would minimize disturbance to certain areas in the short term.

Effects from Air Quality Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Air quality protections would indirectly benefit ecosystems by reducing air pollution that could decrease plant vigor and make plants more susceptible to pest and disease outbreaks. This would foster a healthier ecosystem and would help to protect and preserve wilderness characteristics in wilderness areas. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Geology Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Soil Resources Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Soil erosion reduction measures, including seeding and improving vegetative cover, would reduce compaction and increase infiltration, indirectly improving ecosystem health over the short term. These impacts could extend into long-term benefits from increased vegetative productivity and improved habitat connectivity. All of these effects would help to enhance wilderness characteristics. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Land reclamation in Alternative A would be pursued, although not required, in disturbed areas. This could help to restore wilderness characteristics over the long term in areas with few wilderness characteristics. Impacts would vary, depending on how and if reclamation was achieved, including whether native or nonnative seeds were used in revegetating lands. Any impacts would not be new.

There are no soil compaction prevention measures under Alternative A. This would indirectly impact vegetation because soil compaction prevents water infiltration and may affect plant health and vigor. This could affect wilderness characteristics if ecosystems were unhealthy. However, there

would be no restrictions on vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumption, above. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Impacts from land reclamation activities relating to soil resources management under Alternative B are the same as those under Alternative A.

The BLM would allow multiple uses while mitigating adverse effects from soil compaction without seasonal closures. No seasonal restrictions for compaction would be applied; as such, areas with wilderness characteristics would be impacted year-round, even during times when soils would be most susceptible to compaction. This could degrade ecosystem health and wilderness characteristics. However, vegetation improvement treatments could also occur year-round, which would have impacts similar to those described under Methods and Assumptions, above. Effects would be long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Land reclamation actions under Alternative C would require reclamation of all surface-disturbing activities. This would allow for native vegetation to reestablish and would increase wilderness characteristics over the long term.

Soil compaction prevention measures are the most stringent under this alternative, providing for seasonal use restrictions. This would benefit wilderness characteristics by preventing compaction but would limit when vegetation treatments could occur. Impacts are similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Land reclamation actions under Alternative D would provide the most flexible approach to land reclamation. Impacts on wilderness characteristics would vary depending on how and if reclamation was achieved, including whether native or nonnative seeds were used in revegetating lands. Impacts would be long term.

Soil compaction prevention measures would include seasonal use restrictions, which would occur on a case-by-case basis. Impacts on wilderness characteristics include improved health and vigor from decreased soil compaction and increased infiltration over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Under this alternative, priority watersheds would not be managed. Impacts on water resources would be reduced by complying with water quality regulations and implementing BMPs and land health standards. This would indirectly protect areas with wilderness characteristics throughout the WDO but would provide the fewest action- and location-specific protections of all alternatives. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Priority watershed actions would protect wilderness characteristics in priority watersheds over the long term by restricting certain activities. Under this alternative, multiple uses would be allowed, which could cause some direct impacts on wilderness characteristics over the long term through increased human use, roads, or noise.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Priority watershed actions under Alternative C would provide the greatest protection to wilderness characteristics by imposing the greatest restrictions within those areas over the long term. However, as exclusion zones, they would prevent vegetation improvement treatments, which would enhance wilderness characteristics, that are incompatible with the watershed's primary use. Impacts are similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Priority watershed actions would protect wilderness characteristics from disturbance over the long term by restricting certain activities within these areas. As avoidance areas, they may limit vegetation improvement treatments, which would cause impacts similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

In all alternatives, vegetation forest and woodland products management actions, such as managing for pinyon pine and juniper woodlands, could increase human presence, noise, access roads, and short-term disturbance to forests. This would directly reduce the wilderness characteristics in these areas. However, forest management actions, including monitoring, establishing early warning systems for insect or disease outbreaks, and making special consideration for aspen, cottonwood, and mountain mahogany, and stand treatments, are tools that could be used to improve forest health and increase native species prevalence. This would indirectly increase wilderness characteristics over the long term. Any impacts would not be new.

Implementing SOPs and mitigation measures would minimize or reduce impacts on woodland habitats, including the spread of weeds over the long term. This would increase wilderness characteristics in these areas. Any impacts would not be new.

The extent of forests and woodlands within the WDO is limited, amounting to less than one percent of the total land area. As such, impacts on wilderness characteristics from forest and woodland product management actions would be limited and localized. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Fire and other vegetation improvement treatments would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Under Alternative A, pinyon and juniper woodlands would be managed for the greatest number of uses, which would directly reduce wilderness characteristics in these areas because disturbance and human use would be the greatest of all alternatives. Any impacts would not be new.

The BLM would designate other stands (e.g., pinyon/juniper) or portions of stands in the WDO as old growth forest if an area exhibits the characteristics of old growth and is suitable for designation. This would help to maintain wilderness characteristics over the long term in localized areas. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Fire and other vegetation improvement treatments would have impacts similar to those described under Methods and Assumptions, above.

Pinyon and juniper woodlands would be managed for fewer uses than under Alternative A, although wilderness characteristics could be directly disturbed by human presence, noise, and overharvesting.

Old growth forests would not be designated under Alternative B, and none would be designated in the future. Adverse impacts on stands with old growth characteristics would be avoided, but these areas would not be managed to provide old growth characteristics in the future. This would have the greatest impact on wilderness characteristics in these areas over the long term in localized areas.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Vegetation treatments would be the least aggressive under Alternative C, which would have the least impacts on wilderness characteristics. Impacts are similar to those described under Methods and Assumptions, above.

Pinyon and juniper stands would be managed only for landscape value and Native American uses. With less harvesting allowed in pinyon and juniper stands, there would be less human disturbance to these areas, which would directly protect wilderness characteristics over the long term in localized areas.

This alternative would designate 27,605 acres of old growth forest and other stands as appropriate. This would preserve and maintain these forests and their wildlife habitat, which would protect wilderness characteristics. However, under Alternative C, stands would not be managed for old growth characteristics, which may be less effective in protecting wilderness characteristics. Effects would be localized.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Vegetation improvement treatments would have impacts similar to those described under Alternative B.

As in Alternative A, Alternative D would manage pinyon and juniper woodlands for the greatest number of uses, emphasizing multiple uses. Impacts are the same as those under Alternative A.

This alternative would designate 27,605 acres of old growth forest and would designate other stands as appropriate in the future. In addition, old growth stands would be managed to facilitate old growth characteristics. As a result, wilderness characteristics would be most efficiently protected in Alternative D. Effects would be localized.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Alternative Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Actions to decrease weeds on BLM-administered lands would indirectly improve ecosystem health and habitat values by increasing native species and decreasing the risk of catastrophic wildfire in both the short term and long term. Such a fire could damage or kill native vegetation and allow for the spread of weeds. As a result of these actions, wilderness characteristics would be increased over the long term. However, in the short term, human presence, roads, motorized vehicles, and machinery would directly decrease wilderness characteristics. Actions against weeds would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Further, coordination with agencies and implementation of BMPs would help minimize impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Improving degraded rangeland would reduce the prevalence of invasive species. This would reduce the risk of catastrophic wildfire on rangelands, which would destroy native vegetation. With healthier native vegetation, wilderness characteristics on rangelands would be improved over the long term. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

CC would not be restored under this alternative, resulting in an increase in rangeland fire fuel load. This could put native vegetation at an increased risk of catastrophic fire, which would degrade wilderness characteristics over the long term, if it were to occur. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Restoration of CC would decrease fire fuel loads and could protect areas with wilderness characteristics from catastrophic fire over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Option 1

Lands with Wilderness Characteristics

Impacts on wilderness characteristics from rangeland management actions are the same as those under Alternative B.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Option 2

Lands with Wilderness Characteristics

Restoring CC to Class II levels on 70,000 acres would reduce fuel loads on these lands and would protect areas with wilderness characteristics from catastrophic fire. However, grazing prohibition would keep fuel loads high on the over three million acres that remain, increasing the risk of fire over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Impacts on wilderness characteristics from rangeland management actions are the same as those under Alternative B.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Improving and maintaining meadows and riparian areas would increase human presence and access to these areas, degrading wilderness characteristics over the short term. However, healthier native vegetation that would result from this improvement and maintenance would increase wilderness characteristics over the long term. Any impacts would not be new.

The extent of riparian and wetland areas within the WDO is limited, amounting to less than one percent of the total land area. As such, impacts on wilderness characteristics from riparian and wetland management actions would be limited and localized. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Vegetation improvement treatments for riparian and wetlands management would have impacts similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Vegetation improvement treatments for riparian and wetlands management would have impacts similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

The greatest amount of riparian areas and wetlands (a minimum of 85 percent by 2028) would be restored to PFC under this alternative. This would have the greatest benefit to wilderness characteristics over the long term in localized areas.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Option 1

Lands with Wilderness Characteristics

Grazing management would be used under this option to minimize impacts on riparian areas and wetlands. This could impact areas with wilderness characteristics because there would still be some soil compaction, weed spread or introduction, and vegetation trampling caused by livestock over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Option 2

Lands with Wilderness Characteristics

Removing grazing from lands in the WDO would have the greatest benefit on areas with wilderness characteristics because there would be no impacts from livestock on soil compaction, weed spread or introduction, and vegetation trampling over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Riparian areas and wetlands would be managed so that 85 percent would be progressing toward or achieving PFC by 2028. Impacts would be similar to those described under Alternative C.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Actions near nesting migratory birds would be restricted to minimize human and vehicle presence, noise, and other disturbance, which would protect wilderness characteristics. These restrictions also could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Reintroducing or transplanting big game species could directly and indirectly impact areas with wilderness characteristics by trampling, browsing, and spreading or introducing weeds. These represent both short-term and long-term impacts and could impact ecosystem health through decreased plant vigor or plant mortality and altered stand composition. This would degrade wilderness characteristics.

Under Alternative B, the fewest restrictions would be placed on actions near nesting migratory birds. This would prevent some disturbance to wilderness characteristics. It also could limit the type and timing of vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Reintroducing or transplanting big game species could impact wilderness characteristics in ways similar to Alternative B.

The most restrictions would be placed on actions near nesting migratory birds. This would be most effective in preventing disturbance to these areas, which would protect wilderness characteristics. These restrictions also could limit the type and timing of vegetation improvement treatments, which would have impacts similar to those under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Reintroducing or transplanting big game species could impact wilderness characteristics in ways similar to Alternative A. Restrictions, similar to those described under Alternative A, would be placed on actions near nesting migratory birds.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Special Status Species Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Special status species management across all alternatives would prevent activities leading to listing of species and would require plant inventories, sage-grouse, pygmy rabbit, bat, and raptor avoidance and mitigation and monitoring. Avoiding actions that impact listed or sensitive species or their habitat would protect and preserve wilderness characteristics by preventing human presence, roads, and noise in certain areas. However, this also could preclude implementing treatments that would improve ecosystem health and plant community composition. This would indirectly impact wilderness characteristics in these areas. Impacts would vary with the type of treatment proposed and the nature and extent of the restrictions. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Restrictions on actions near special status plants, sage-grouse and sage-grouse leks (courtship and mating areas, pygmy rabbits, and bat habitat would reduce disturbance to these areas and would protect wilderness characteristics. These restrictions could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Alternative B places the least stringent restrictions on actions near special status plants, sage-grouse and sage-grouse leks, pygmy rabbits, and bat habitat. These restrictions would still reduce disturbance to these areas, protecting wilderness characteristics, and could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Alternative C places the greatest amount of restrictions on activities that occur near special status species and their habitats. Of all alternatives, this would have the greatest impact on wilderness characteristics, similar to those described under Alternatives A and B.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Impacts from these actions are similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Managing wild horses and burros within HMAs and HAs could impact wilderness characteristics by concentrating soil compaction and browsing into defined areas. This would concentrate such impacts as weed invasion and plant reduction in certain areas, while preventing impacts in other areas. Limitations on certain activities, such as motor vehicle racing, would limit road use and noise disturbance, improving wilderness characteristics in these areas. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Population control measures would reduce the impact of WHB on lands by decreasing the risk of soil compaction, trampling, and the introduction or spread of weeds. This would help maintain ecosystem health and wilderness characteristics. However, developing alternate waters for WHB could increase ecosystem degradation from WHB, which would consequently degrade wilderness characteristics. Any impacts would not be new.

Alternating conversion of land between wild horse use and burro use would spread impacts on lands through time, as the species have slightly different habitat and forage preferences. This would indirectly benefit ecosystem health by minimizing WHB impacts, such as soil compaction, vegetation trampling, and the spread of weeds, in any given area at a certain time. This would indirectly foster wilderness characteristics in areas throughout the WDO. Any impacts would not be new.

Protection measures for WHB would prohibit or limit certain activities in HMAs. This would prevent disturbance from human use, such as trampling and noise. Protection measures could limit vegetation improvement treatments in certain areas. However, mitigation measures would be used to provide a flexible approach to activities within HMAs. Impacts are similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Alternative B would implement the most aggressive population control measures. This would have the greatest effect in reducing the impact of WHB on wilderness characteristics by decreasing the risk of soil compaction, vegetation trampling, and the introduction or spread of weeds. AML reduction in response to decreased WHB water supply would intensify these impacts.

Under Alternative B, land would not be converted between wild horse use and burro use, which would impact ecosystem health by concentrating such WHB impacts as soil compaction, vegetation trampling, and weed spread in certain areas. This could indirectly impact areas with wilderness characteristics.

Protection measures for WHB would have impacts similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

The least aggressive population control measures would be employed in Alternative C. This would have the lowest reduction of WHB impact on wilderness characteristics, but actions would still decrease the risk of soil compaction, trampling, and weed spread or introduction. However, AML reduction in response to decreased water availability for WHB would decrease impacts of WHB on areas with wilderness characteristics.

Impacts from conversion of land between wild horse use and burro use are similar to those described under Alternative A.

Protection measures for WHB are the greatest under this alternative and would prohibit or limit certain activities in HMAs. This would protect wilderness characteristics from disturbance and would prevent impacts due to human use, such as vegetation trampling, noise, and litter.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Impacts from population control measures and development of alternative water sources are similar to those described under Alternative A.

Impacts from conversion of land between wild horse use and burro use are similar to those described under Alternative A.

Impacts from WHB protection measures are similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Wildfire suppression would prevent catastrophic destruction of vegetation and would preserve wilderness characteristics in these areas over the long term. Minimum impact suppression tactics would minimize unanticipated effects on wilderness characteristics during fire suppression activities. Any impacts would not be new.

Fuels management actions would reestablish native vegetation communities, providing for healthy vegetation and wilderness characteristics over the long term. These actions would allow fire to play its natural role more frequently and would reduce the likelihood of catastrophic wildfire, which

would protect wilderness characteristics over the long term and over large areas. Any impacts would not be new.

Implementing a response to wildfires, based on social, legal, and ecological consequences of the fire, would protect areas with wilderness characteristics from catastrophic fire over the long term. Any impacts would not be new.

Wilderness Study Areas

The BLM would develop and implement responses to wildfires, based on social, legal, and ecological consequences of the fire, to guide fire suppression, which involves a range of actions. There is the possibility that certain types of fire suppression actions could damage the wilderness values associated with WSAs. For example, heavy equipment could be used in a WSA during fire suppression actions, which could continue to alter the landscape and vegetation.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Alternative A does not identify areas that could benefit from allowing fire for resource benefit. By not prioritizing suitable areas for allowing fire for resource benefit, actions to improve wilderness characteristics may not be implemented in the most effective areas. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Under this alternative, 16,950 acres of protected wilderness characteristics areas would be designated as suitable for allowing fire for resource benefit. This would prioritize areas where wilderness characteristics could be improved through the use of fire, allowing for more efficient and effective treatment application. These areas represent a small portion of the WDO, so impacts would be localized.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Alternative C does not identify areas that could benefit from allowing fire for resource benefit. By not prioritizing suitable areas for allowing fire for resource benefit, wilderness characteristics may not be fully protected.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Under this alternative, 6,103 acres of protected wilderness characteristics areas would be designated as suitable for allowing fire for resource benefit. This would prioritize areas where wilderness characteristics could be improved through the use of fire, allowing for more efficient and effective treatment application. These areas represent a small portion of the WDO, so impacts would be localized.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Protection of cultural resources, such as aspen art trees and groves, would prevent disturbance and fragmentation of forests, which would indirectly protect wilderness characteristics. However, these protections may limit the type of vegetation improvement treatments that could be implemented; impacts are similar to those described under Methods and Assumptions. These areas are small, relative to the total area of the WDO, so impacts would be localized and would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Tribal Consultation

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This would indirectly limit disturbance and improve wilderness characteristics over the long term in certain areas. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Visual Resources Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Implementing VRM guidelines, particularly managing WSAs as Class I, would prevent disturbance to these areas, protecting wilderness characteristics. However, VRM guidelines could increase the difficulty of accomplishing vegetation management actions by limiting the extent or effectiveness of restoration efforts, such as logging or thinning. This could prevent certain areas from being treated effectively to improve forest health or species composition, which would indirectly reduce wilderness characteristics. Any impacts would not be new.

Wilderness Study Areas

The BLM would manage all WSAs as VRM Class I, which means changes to the characteristic landscape should be very low and must not attract attention. This would affect, for example, the placement and composition of structures in WSAs. By placing structures in appropriate places and using appropriate material, the BLM would continue to preserve the character of the landscape.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Under Alternative A, 420,271 acres and 346,302 acres would be managed to VRM Class I and II guidelines, respectively. These actions would limit the scope of logging, thinning, or prescribed burning activities and would prohibit treatments and prescriptions that would change the visual character. Overall, meeting VRM Class I and II guidelines would increase the difficulty of accomplishing forest and woodland management actions and would indirectly limit the extent or effectiveness of the management goals. Any impacts would not be new.

Wilderness Study Areas

Under Alternative A, the BLM would manage all WSAs as VRM Class I. Areas released from study would be inventoried using the VRM System to establish VRM classes. There are no new impacts.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Under Alternative B, 500 acres and 23,535 acres protected wilderness characteristics areas would be managed to VRM Class I and II guidelines, respectively. This alternative is the least restrictive to disturbance in areas that have wilderness characteristics. Impacts are similar to those described under Alternative A.

Wilderness Study Areas

Under Alternative B, the BLM would manage all WSAs as VRM Class I. Areas released from study would be managed as VRM Class II. This would provide a definite level of management that would retain the character of the landscape, thereby improving the likelihood of protecting the visual resources that were, in part, responsible for designating the area as a WSA.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Under Alternative C, 500 acres of protected wilderness characteristics areas would be managed to VRM Class I guidelines and 104,957 acres of protected wilderness characteristics areas would be managed to VRM Class II guidelines. This alternative is the most protective of wilderness characteristics.

Wilderness Study Areas

The impacts from managing the visual resources of WSAs released from wilderness consideration are the same as those under Alternative B.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Under Alternative D, 500 acres and 104,745 acres protected wilderness characteristics areas would be managed to VRM Class I and II guidelines, respectively. Impacts are similar in magnitude to those described under Alternative C, since wilderness characteristics areas would be protected under Alternative D.

Wilderness Study Areas

The impacts from managing the visual resources of WSAs released from wilderness consideration are the same as those under Alternative B.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Collecting monitoring data may help to improve rangelands and reduce the spread of weeds. This would, in turn, reduce the likelihood of catastrophic fire that would destroy native vegetation. As such, wilderness characteristics would be protected, and any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Livestock grazing would continue to be allowed on 8,232,727 acres of land under this alternative, which would have the greatest impact on wilderness characteristics. Grazing, including grazing on acquired lands, and range improvement actions would reduce fuel loads on these lands, making catastrophic fire less likely over the long term. This would indirectly allow for the maintenance and preservation of areas with wilderness characteristics within the WDO. Any impacts would not be new.

Riparian areas would be protected, preventing impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds. This would maintain plant vigor, stand composition, and fire regimes, which would indirectly improve wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There would be no change to the number of acres of grazing allotments. There are no new impacts.

The BLM would use adaptive management principles and practices to achieve resource objectives as long as such principles and practices conform to the IMP. New range developments and structural improvements could be permitted within WSAs if the development would enhance wilderness values.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Under Alternative B, livestock grazing would be open on 178,167 acres of protected wilderness characteristics areas, which would impact wilderness characteristics. Impacts are similar to those described under Alternative A.

Wilderness Study Areas

The impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Option 1

Lands with Wilderness Characteristics

Similar to Alternative B, livestock grazing would be open on 178,167 acres of protected wilderness characteristics areas under this alternative, which would impact wilderness characteristics. Grazing and range improvement actions would reduce fuel loads on these lands, making catastrophic fire to areas with wilderness characteristics less likely over the long term. Grazing would not be permitted on acquired land, increasing the risk of fire in nearby areas with wilderness characteristics.

Greater protection would be given to riparian woodlands, requiring the restoration and maintenance of biological integrity in these areas. This would prevent impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds and would maintain plant vigor, stand composition, and fire regimes. This would indirectly protect wilderness characteristics over the long term.

Wilderness Study Areas

The impacts on WSAs are the same as those under Alternative A.

Option 2

Lands with Wilderness Characteristics

The no grazing option would not use livestock grazing to reduce fuel loads, increasing the risk of catastrophic fire in areas with wilderness characteristics. However, this alternative would give greater protection to riparian woodlands, as under Alternative C, Option 1.

Wilderness Study Areas

There is no grazing in WSAs under Alternative C, Option 2. By preventing livestock from trampling and eating vegetation, this could improve natural habitat conditions in the WSAs.

Because there would be no grazing in WSAs, the BLM would not install structural improvements in WSAs. There would be no change to the wilderness values of WSAs.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Similar to Alternative B, Alternative D would have 178,167 acres of protected wilderness characteristics areas open to grazing. Impacts are similar to those described under Alternative A, except that fewer acres of land would be open to grazing.

Wilderness Study Areas

The impacts on WSAs are the same as those under Alternative A.

Effects from Minerals Management

Effects Common to All Alternatives

Salable

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from salable minerals management. Impacts associated with these actions would include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to maintain WSAs as closed to mineral material disposal. This would continue to protect the wilderness values of the WSAs from mineral material activities. There would be no new impacts.

Fluid

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from fluid minerals management. Impacts associated with these actions include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to maintain WSAs as closed to leasing. This would continue to protect the wilderness values of the WSAs from fluid mineral activities. There would be no new impacts.

The BLM would not allow fluid mineral leases within a quarter mile of a WSA boundary. This would provide a buffer between WSAs and fluid mineral-related activities, reducing the likelihood of these activities diminishing the outstanding values for which the area was designated as a WSA. There would be no new impacts.

Solid

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from solid minerals management. Impacts associated with these actions would include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to maintain WSAs as closed to solid mineral leasing. This would continue to protect the wilderness values of the WSAs from solid mineral activities. There would be no new impacts.

The BLM would not allow solid mineral leases within a quarter mile of a WSA boundary. This would provide a buffer between WSAs and solid mineral-related activities. This would reduce the likelihood of these activities diminishing the outstanding values for which the area was designated as a WSA. There would be no new impacts.

Locatable

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from locatable minerals management. Impacts associated with these actions would include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

Activities resulting from pre-FLPMA exploration and development, under certain circumstances, may impair wilderness values in WSAs. The IMP does not allow any post-FLPMA mining activities that would impair suitability for wilderness use. Consequently, effects on wilderness values would be nonexistent for post-FLPMA activities.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists. The assumption is that reasonable foreseeable development actions that are incompatible with objectives, goals, and actions for WSAs or areas with wilderness characteristics would not be allowed, thereby protecting the special values of these areas.

Individual Effects under Alternative A

Salable

Lands with Wilderness Characteristics

Areas open to mineral material disposal could impact wilderness characteristics, as described under the Mineral Resources Effects Common to All Alternatives section. Alternative A opens 6,786,059 acres to salable minerals. Any impacts would not be new.

The fewest acres (418,938 acres) would be closed to mineral material disposal under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

Alternative A does not include actions for limiting mineral material disposal adjacent to WSAs. There would be no new impacts, and ongoing impacts would continue. For example, mineral material activities could continue to occur adjacent to WSAs, which could result in mineral material and related activities that could diminish the outstanding values that were responsible for designating the area as a WSA.

Fluid

Lands with Wilderness Characteristics

Alternative A opens the greatest acreage (6,745,878 acres) to fluid minerals and would therefore have the greatest impact over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management. Any impacts would not be new.

The fewest acres (446,887 acres) would be closed to fluid minerals under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Solid

Lands with Wilderness Characteristics

Alternative A opens the greatest acreage (6,776,198 acres) to solid mineral leasing and would therefore have the greatest impact over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management. Any impacts would not be new.

The fewest acres (416,652 acres) would be closed to solid minerals under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Locatable

Lands with Wilderness Characteristics

Alternative A opens the greatest acreage (7,198,294 acres) to locatable mineral leasing and would therefore have the greatest impact over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management. Any impacts would not be new.

The fewest acres (6,543 acres) would be closed to locatable minerals under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Salable

Lands with Wilderness Characteristics

Alternative B opens the greatest acreage (29,902 acres) of protected wilderness characteristics areas to salable mineral development and would therefore have the greatest impact over the long term. Special status species habitat would be avoided, which could indirectly protect areas with wilderness

characteristics over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management.

The fewest acres (500 acres) of protected wilderness characteristics areas would be closed to mineral material disposal under Alternative B; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term.

Wilderness Study Areas

The impacts from mineral material disposal actions adjacent on WSAs are the same as those under Alternative A.

Fluid

Lands with Wilderness Characteristics

Areas open to fluid mineral leasing could impact forests through impacts similar to those described under Effects Common to All Alternatives for Minerals Management. Alternative B would open 29,902 acres of protected wilderness characteristics areas to fluid minerals. Restrictions would protect habitats within 100 yards of documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites. This would preserve wilderness characteristics in these areas.

Under Alternative B, 57,063 acres of protected wilderness characteristics areas would be closed to fluid mineral leasing.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Solid

Lands with Wilderness Characteristics

Under Alternative B, 29,902 acres of protected wilderness characteristics areas would be open to solid mineral leasing, causing impacts similar to those described under Effects Common to All Alternatives for Minerals Management.

Impacts would be limited on 57,063 acres of protected wilderness characteristics areas, where lands would be closed to solid mineral leasing.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Locatable

Lands with Wilderness Characteristics

Similar to Alternative A, Alternative B opens the least acreage (16,854 acres) of protected wilderness characteristics areas to locatable minerals and would cause the least impact on protected wilderness

characteristics areas over the long term. Impacts are similar to those described under Effects Common to All Alternatives for Minerals Management.

No acres of protected wilderness characteristics areas would be closed to locatable minerals under Alternative B; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Salable

Lands with Wilderness Characteristics

Alternative C would open the least acreage (860 acres) of protected wilderness characteristics areas to salable minerals, which would be most effective in preventing impacts on wilderness characteristics over the long term. Under this alternative, 157,705 acres of protected wilderness characteristics areas would be closed to salable minerals.

Wilderness Study Areas

Under Alternative C, mineral material disposals would not be allowed within a quarter mile of a WSA boundary. This would provide a buffer between WSAs and mineral material-related activities, reducing the likelihood of these activities diminishing the outstanding values responsible for designating the area as a WSA.

Fluid

Lands with Wilderness Characteristics

Alternative C would open the least acreage (860 acres) of protected wilderness characteristics areas to fluid minerals, which would be most effective in preventing impacts on wilderness characteristics over the long term. Under this alternative, 220,779 acres of protected wilderness characteristics areas would be closed to fluid minerals.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Solid

Lands with Wilderness Characteristics

Alternative C would open the least acreage (860 acres) of protected wilderness characteristics areas to solid minerals, which would be most effective in preventing impacts on wilderness characteristics over the long term. Under this alternative, 220,779 acres of protected wilderness characteristics areas would be closed to solid minerals.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Locatable

Lands with Wilderness Characteristics

Alternative C would open 28,668 acres of protected wilderness characteristics areas to locatable minerals, which would have impacts on wilderness characteristics over the long term. Protections would be provided on 75,333 acres, where land would be closed to locatable minerals.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Salable

Lands with Wilderness Characteristics

Alternative D would open 28,013 acres of protected wilderness characteristics areas to salable minerals. Seasonal restrictions would minimize impacts on areas with wilderness characteristics within two miles of active sage-grouse leks. Overall, Alternative D would have the least impact on wilderness characteristics over the long term.

Under this alternative, 22,197 acres of protected wilderness characteristics areas would be closed to salable minerals. Impacts are similar to those described under Effects Common to All Alternatives for Minerals Management.

Wilderness Study Areas

The impacts from mineral material disposal actions adjacent to WSAs are the same as those under Alternative C.

Fluid

Lands with Wilderness Characteristics

Areas open to fluid mineral leasing could impact protected wilderness characteristics areas through impacts similar to those described under Effects Common to All Alternatives for Minerals Management. Alternative D would open 28,507 acres and close 75,955 acres to fluid minerals.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Solid

Lands with Wilderness Characteristics

Under Alternative D, 28,507 acres of protected wilderness characteristics areas would be open to solid mineral leasing, causing impacts similar to those described under Effects Common to All Alternatives for Minerals Management.

Impacts would be limited on 75,955 acres, where protected wilderness characteristics areas would be closed to solid mineral leasing.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Locatable

Lands with Wilderness Characteristics

Under Alternative D, the greatest acreage (36,827 acres) of protected wilderness characteristics areas would be open to locatable mineral leasing, causing the greatest impacts of all alternatives. Impacts are similar to those described under Effects Common to All Alternatives for Minerals Management. No acres of protected wilderness characteristics areas would be closed to locatable minerals.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Managing BLM-administered lands to provide dispersed recreation could directly degrade wilderness characteristics throughout the WDO through human disturbance, noise, weed introduction or spread, and impacts on vegetation. Impacts would vary, depending on the type of activities allowed in the area, and could be short term and long term. Any impacts would not be new.

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, including areas with wilderness characteristics. Specific sites would be subject to NEPA analysis to minimize impacts on wilderness characteristics.

Vegetation improvement treatments may be restricted on some lands used for recreation, which would have impacts similar to those described under Methods and Assumptions at the beginning of this chapter. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue managing OHV use in WSAs as limited to designated roads and trails identified at the time of the wilderness inventory (per guidance from IMP). There would be no new impacts.

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, including WSAs. Specific sites would be subject to NEPA analysis to minimize impacts on WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Under Alternative A, there would be no camping limitations or prohibitions throughout the WDO. In addition, the Pine Forest SRMA would be maintained, and issuance of special recreation permits would be the least restricted. The greatest acreage (6,782,790 acres) would be open to OHVs under Alternative A, with the least amount of land (416,652 acres) limited and with 24,832 acres closed. Combined, these actions would allow for disturbance from increased human presence, OHV use, trail creation, and noise. This, in turn, could compact soils, trample vegetation, disturb wildlife, and increase dust, which could decrease plant vigor and alter stand composition of areas throughout the WDO. As a result, wilderness characteristics would be directly and indirectly degraded. Any impacts would not be new.

Wilderness Study Areas

If Congress were to release a WSA from consideration as wilderness, the BLM would continue to manage all or parts of a WSA for purposes other than wilderness, using a variety of resource management objectives.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Camping limitations and prohibitions throughout the ERMA would minimize impacts on wilderness characteristics on these lands. In addition, designating three SRMAs would impact wilderness characteristics to varying degrees, depending on the recreation market identified for the SRMA. For example, the Nightingale SRMA would be targeted for undeveloped recreation-tourism, which would have less of an impact than Winnemucca and Pine Forest SRMAs, which allow for increased motorized vehicle access. Under Alternative B, protected wilderness characteristics areas would not be open to OHVs, with the least amount of protected wilderness characteristics areas (4,281 acres) closed and with 217,358 acres limited. Together, impacts from these actions include increased human and vehicle presence, noise, soil compaction, vegetation trampling, wildlife disturbance, and increased dust. These impacts could decrease plant vigor, alter stand composition, and lower wilderness characteristics in areas throughout the ERMA, SRMAs, and OHV routes. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Issuance of special recreation permits would be the least restrictive under this alternative, which could cause some impacts on wilderness characteristics through increased human use, trampling, litter, and noise disturbance.

Wilderness Study Areas

If Congress were to release a WSA from consideration as wilderness, the BLM would continue to manage all or parts of a WSA for purposes other than wilderness, using a variety of resources management objectives.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Camping limitations and prohibitions throughout the ERMA would minimize impacts on wilderness characteristics on these lands. In addition, designating two SRMAs would have impacts on forest vegetation similar to those described under Alternative B. Under Alternative C, no acres within protected wilderness characteristics areas would be open to OHVs, with 21,698 acres closed and 195,659 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Impacts from recreation actions would be lowest under this alternative, as it is the most restrictive and prohibitive. Impacts would occur, however, that are similar to those described under Alternative B.

Issuance of special recreation permits would be the most restrictive under Alternative C and would cause the least impact on wilderness characteristics through increased human use, trampling, litter, and noise disturbance.

Wilderness Study Areas

The impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Camping limitations and prohibitions throughout the ERMA would minimize impacts on wilderness characteristics on these lands. In addition, designation of three SRMAs would have the same impacts on wilderness characteristics as those described under Alternative B. Under Alternative D, no acres within protected wilderness characteristics areas would be open to OHVs, with 4,281 acres closed and with 217,358 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Together, impacts from these actions are similar to those described under Alternative B.

Issuing special recreation permits would cause some impacts on wilderness characteristics through increased human use, trampling, litter, and noise disturbance.

Wilderness Study Areas

The impacts are the same as those under Alternatives A and B.

Effects from Renewable Energy Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could occur with issuance of new ROWs, which require vegetation clearing and access roads and would increase human presence, machinery, noise, weed potential, and habitat fragmentation. This would degrade wilderness characteristics over the long term. BMPs, stipulations, and mitigation measures would be implemented to minimize impacts. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Maintaining existing exclusion areas within the WDO would protect and limit disturbance to vegetation and habitat and would prevent weed invasion or spread caused by development. This would protect wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Designating avoidance areas within the WDO would protect and limit disturbance to vegetation and habitat and would prevent weed invasion or spread caused by development. This would protect wilderness characteristics in these areas over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones within the WDO would have the greatest impact on wilderness characteristics by protecting and limiting disturbance to vegetation and habitat and by preventing weed invasion or spread.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones within the WDO would impact wilderness characteristics by protecting and limiting disturbance to vegetation and habitat and by preventing weed invasion or spread.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Maintaining roads necessary for fire suppression would allow for increased human presence, noise, and access to certain areas, which would degrade wilderness characteristics. However, roads would allow for suppression of wildfires when necessary, which would protect native vegetation and wilderness characteristics over the long term. Any impacts would not be new.

Vegetation improvement actions, such as noxious weed control measures, would have impacts similar to those described under Methods and Assumptions, at the beginning of this chapter. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Transportation actions under Alternative A would not protect wildlife, sensitive species, or their habitats. As a result, wilderness characteristics could be impacted by road and trail construction from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Transportation actions to minimize effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and habitat and would prevent weed invasion or spread from

road or trail construction. This would protect wilderness characteristics in these areas over the long term.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Impacts are similar to those described under Alternative B.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Impacts are similar to those described under Alternative B.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Lands and Realty Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Vegetation and wildlife habitat value would be given consideration when the WDO makes disposal and acquisition decisions, which could indirectly protect wilderness characteristics over the long term. Acquisition of lands would provide additional opportunities to improve wilderness characteristics in these areas. Any impacts would not be new.

Acquisition of environmentally sensitive land and conservation easements would protect and limit disturbance and fragmentation of vegetation and habitat and would prevent weed invasion or spread caused by development. This would protect wilderness characteristics on these lands. These acquisitions could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, which appear at the beginning of this chapter. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Issuance of ROWs would not be limited, and avoidance areas or exclusion zones for lands and realty management actions would not be designated under Alternative A. Wilderness characteristics could be directly impacted from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to not prioritize the acquisition of inholdings in WSAs. There would be no new impacts, and those identified under Alternative C would not occur.

No avoidance and exclusion areas would be established in WSAs if they were released from consideration as wilderness. There would be no new impacts on WSAs, and ongoing impacts would continue. For example, development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Designating avoidance areas would have impacts similar to the renewable energy management actions under Alternative B.

Lack of restriction on ROW issuance could directly impact wilderness characteristics via vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust. This would degrade wilderness characteristics over the long term.

Wilderness Study Areas

The impacts from land acquisition prioritization are the same as those under Alternative A.

No avoidance and exclusion areas would be established in WSAs if they were released from consideration as wilderness, resulting in the same impacts as those under Alternative A.

Avoidance areas for Disaster Peak WSA (632 acres) and North Fork of the Little Humboldt River WSA (67,284 acres) would be established if the WSA were released from consideration as wilderness. These avoidance areas would protect natural resources from development and disturbance.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones would have impacts similar to renewable energy management actions under Alternative C.

Restricting ROW issuance could directly impact wilderness characteristics by protecting and limiting vegetation disturbance, habitat fragmentation, and weed invasion or spread from road construction.

Wilderness Study Areas

The BLM would prioritize the acquisition of inholdings in WSAs. This would improve the WSA management by identifying areas that would facilitate land purchases to accomplish objectives for WSA management.

The following exclusion areas would be established if the WSA were released from consideration as wilderness:

- Alder Creek WSA—5,145 acres;
- Blue Lakes WSA—19,904 acres;
- Disaster Peak WSA—11,203 acres; and
- North Fork of the Little Humboldt River WSA—66,644 acres.

The following avoidance areas would be established if the WSA were released from consideration as wilderness:

- China Mountain WSA—10,022 acres;
- Mt. Limbo WSA—20,146 acres;
- Selenite Mountains WSA—18,905 acres; and
- Tobin Range WSA—10,785 acres.

These exclusion and avoidance areas would protect natural resources from development and disturbance.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones would impact wilderness characteristics by protecting and limiting disturbance to vegetation and habitat and by preventing weed invasion or spread.

Lack of restriction on ROW issuance could directly impact wilderness characteristics through vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust.

Wilderness Study Areas

The impacts from land acquisition prioritization are the same as those under Alternative C.

Alternative D would establish the same exclusion areas as Alternative B. The following avoidance areas would be established if the WSA were released from consideration as wilderness:

- Alder Creek WSA—5,145 acres;
- Blue Lakes WSA—19,904 acres;

- China Mountain WSA—8,245 acres;
- Disaster Peak WSA—11,412 acres;
- Mt. Limbo WSA—24,794 acres;
- Selenite Mountains WSA—31,878 acres; and
- Tobin Range WSA—7,002 acres.

These exclusion and avoidance areas would protect natural resources from development and disturbance.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

ACECs would provide an undisturbed area with lower human presence, fewer roads, noise, and other disturbances. This would protect wilderness characteristics on these lands. However, restrictions on vegetation improvement treatments could have impacts similar to those described under Methods and Assumptions, which appears at the beginning of this chapter. ACECs are small, relative to the total area of the WDO, so they would be localized. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Maintaining the Osgood Mountain Milkvetch ACEC would protect vegetation and habitat and would prevent disturbance and fragmentation of habitat within the ACEC, thereby protecting wilderness characteristics. This action could increase vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, found at the beginning of this chapter. This ACEC is small, relative to the total area of the WDO, so impacts would be localized and would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Effects from ACEC/RNA management under Alternative B are the same as those under Alternative A.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Designating four ACECs within the WDO would provide the greatest protection to wilderness characteristics and would prevent disturbance and fragmentation of forested areas within these ACECs. This action could limit implementation of vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Effects from ACEC/RNA management under Alternative D are the same as those under Alternative C.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Backcountry byways may attract more tourism to areas that they access and could increase human use and degradation of nearby lands. This would directly degrade wilderness characteristics in these areas. Currently, Lovelock Cave is the only backcountry byway, but it does not access large forested areas. However, expansion of BCBs could cause greater impact on wilderness characteristics. Impacts would vary, depending on the locations of new BCBs and the areas they would access. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from National Trails Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

No WSRs would be managed under Alternative A, which would not protect rivers or riparian areas within the WDO. As such, impacts on wilderness characteristics would not be restricted, including those from increased use, road and trail construction, soil compaction, noise, and vegetation trampling. However, vegetation improvement treatments would not be restricted, having impacts similar to those under Methods and Assumptions. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

WSRs would be managed under Alternative B but would provide for multiple uses. There would be limited impacts on wilderness characteristics, but some impacts could occur by allowing multiple uses. Impacts include those from increased use, soil compaction, noise, and trampling.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

WSRs would be managed under Alternative C and would limit other uses. As a result, there would be limited impacts on wilderness characteristics. Vegetation improvement treatments would be restricted, causing impacts similar to those described under Methods and Assumptions.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

WSRs would be managed within priority watersheds under Alternative D and would limit other uses. As a result, there would be limited impacts on wilderness characteristics within these areas. Vegetation improvement treatments would be restricted, causing impacts similar to those described under Methods and Assumptions.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Management of lands with wilderness characteristics would prevent disturbance in certain areas within the WDO, which would protect wilderness characteristics. However, these would impact vegetation improvement treatments on these lands, which would have impacts similar to those

described under Methods and Assumptions. Lands with wilderness characteristics are small relative to the total area of the WDO, so impacts would be localized. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to manage WSAs under its Interim Management Policy until Congress either designates these areas or releases them for other purposes. If Congress were to release a WSA from consideration as wilderness, the BLM would continue to manage all or parts of a WSA for purposes other than wilderness, using a variety of resources management objectives. There would be no new impacts.

Individual Effects under Alternative A

Lands with Wilderness Characteristics

Alternative A provides the least protection for wilderness characteristics because it would manage these areas for multiple uses, which would allow for some human disturbance. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no specific actions that are likely to affect WSAs.

Individual Effects under Alternative B

Lands with Wilderness Characteristics

Impacts are similar to but less than those described under Alternative A. Under Alternative B, the BLM would manage 211,638 acres of lands containing wilderness characteristics. This would allow for more targeted and effective management of wilderness characteristics to meet multiple use and sustained yield objectives, compared with Alternative A.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Individual Effects under Alternative C

Lands with Wilderness Characteristics

Alternative C would provide the greatest protection to lands outside of WSAs with wilderness characteristics by specifically managing 211,638 acres to protect wilderness characteristics and implementing restrictions and stipulations in these areas, including closure to mineral leasing and ROW exclusion zones.

Wilderness Study Areas

The BLM would protect wilderness characteristics with a designation of closed to mineral leasing, ROW exclusion zones, and priority habitat 1 in the portion of the Tobin Range between the China Mountain WSA and the Mount Tobin WSA (33,854 acres). This would limit certain types of activities and, in turn, would preserve the naturalness of the areas next to the WSAs.

Individual Effects under Alternative D

Lands with Wilderness Characteristics

Impacts are similar to but greater than those described under Alternative C. Under Alternative D, the BLM would manage 211,638 acres to protect wilderness characteristics. Restrictions and stipulations would be implemented but are unspecified to provide a flexible and location-specific approach to management of individual areas. Impacts would depend on the restrictions that are applied and the uses that are allowed.

Wilderness Study Areas

Impacts on WSAs are the same as those under Alternative A.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

WWV sites could directly impact wilderness characteristics by allowing for more human presence, noise, and vehicles to the sites over the long term. These areas are small relative to the total area of the WDO, so impacts would be localized. Any impacts would not be new.

Wilderness Study Areas

There are no impacts because there are no actions that are likely to affect WSAs.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WSAs or areas with wilderness characteristics.

Individual Effects under Alternative B

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts on WSAs or areas with wilderness characteristics are the same as those under Alternative A.

Cumulative Effects

Past actions and events contributing to cumulative effects within or adjacent to WSAs or areas with wilderness characteristics have resulted primarily from surface-disturbing activities and population growth. Use of natural resources within the WDO planning area is expected to remain at current or slightly increased levels. As a result, surface-disturbing activities affecting WSAs or areas with wilderness characteristics could continue. However, the BLM would maintain discretionary authority over most land uses and would permit only those actions that would not impair or conflict with these areas, reducing cumulative effects on these areas. As the population increases, activity and use within or adjacent to these areas would increase. An increasing population could continue to build housing closer to these areas, thereby affecting the quality of natural and cultural resources.

4.4.5 Watchable Wildlife Viewing Sites

Summary

In general, effects common to all alternatives involve actions that maintain or improve vegetation or wildlife habitat. Specific actions to achieve this are associated with most resources.

Overall, impacts on WWV sites would be limited since these sites are localized and most of them are in remote areas. In absolute terms, Alternatives C and D would have similar impacts on WWV sites, with some exceptions. Alternative C, Option 2 would provide additional protection to WWV sites because it would protect the areas from damage by livestock grazing, such as trampled vegetation. Compared to Alternatives C and D, Alternative B would provide fewer opportunities for protecting the special resources associated with these areas.

In relative terms, Alternatives B, C, and D differ in their degree of impact on WWV sites. The differences in degree of impact on WWV sites are detailed below under each alternative.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area, and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in use of BLM-administered land;
- The value of a watchable wildlife viewing site depends on the presence of healthy undisturbed habitat, composed of native vegetation, and on maintaining healthy, viable wildlife populations. Therefore, actions to improve any of these characteristics would indirectly benefit potential watchable wildlife viewing sites;
- Management actions that include vegetation treatment would indirectly improve the value of WWV sites for wildlife over the long term by improving ecosystem health and vegetation composition, structure, and diversity. These would be implemented by removing weeds, increasing native vegetation, and managing for a certain plant community composition. Weed removal, in particular, would reduce fuel loads and decrease the risk of catastrophic fire that would destroy vegetation and wilderness characteristics. However, these actions also would directly reduce wildlife habitat value over the short term by increasing human presence, vehicles, road use, and noise. Actions to limit vegetation treatments could prevent ecosystem health improvements in the long term but would minimize disturbance to certain areas in the short term; and
- Detailed analyses of impacts on habitats and wildlife from the varying degrees of alternative objectives and actions are provided in Section 4.2.5 (Vegetation—Forest/Woodland Products), Section 4.2.6 (Vegetation—Weeds), Section 4.2.7 (Vegetation—Rangelands),

Section 4.2.8 (Vegetation—Riparian Habitat and Wetlands), Section 4.2.9 (Fish and Wildlife), and Section 4.2.10 (Special Status Species).

Effects from Air Quality Management

Effects Common to All Alternatives

Air quality protections would indirectly benefit ecosystems by reducing air pollution that could decrease plant vigor and make plants more susceptible to pest and disease outbreaks. This would foster a healthier ecosystem and would help to protect and preserve wildlife habitat near WWV sites. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Geology Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Soil Resources Management

Effects Common to All Alternatives

Soil erosion reduction measures, including seeding and improving vegetative cover, would reduce compaction and increase infiltration, indirectly improving ecosystem health over the short term. These impacts could extend into long-term benefits from increased vegetative productivity and improved habitat connectivity, which would attract wildlife to WWV sites. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Water Resources Management

Effects Common to All Alternatives

Effective watershed management, which minimizes erosion and maintains hydrologic flow and vegetative community health, would result in healthy and diverse plant communities, which in turn provide wildlife habitat, especially in riparian areas. Healthy watersheds improve fish habitat and promote healthy fish populations. As such, WWV sites would benefit from effective watershed management.

Acquiring water rights that provide water to wildlife and acquiring water rights associated with in-stream flows would benefit wildlife since water is a crucial habitat component. This would improve WWV sites in the long term.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

In all alternatives, forest and woodland products management actions, such as managing for pinyon pine and juniper woodlands, could increase human presence, noise, access roads, and short-term disturbance to forests. This would directly reduce the habitat value near WWV sites in these areas. However, forest management actions, including monitoring, establishing early warning systems for insect or disease outbreaks, and making special consideration for aspen, cottonwood, and mountain mahogany, and stand treatments, are tools that could be used to improve forest health and increase native species prevalence. This would indirectly increase habitat value and improve WWV sites over the long term. Any impacts would not be new.

The extent of forests and woodlands within the WDO is limited, and WWV sites are localized. As such, impacts on WWV sites from forest and woodland product management actions would be limited and localized. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Individual Alternative Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Actions to decrease weeds on BLM-administered lands would indirectly improve ecosystem health by increasing native species and decreasing the risk of catastrophic wildfire in both the short term and long term. Such a fire could damage or kill native vegetation and allow the spread of weeds. As a result of these actions, wildlife habitat value near WWV sites would be increased over the long term. However, in the short term, human presence, roads, motorized vehicles, and machinery would directly decrease wildlife habitat value. Actions against weeds would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Further, coordination with agencies and implementation of BMPs would help minimize impacts on wildlife habitat near WWV sites over the long term. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Improving degraded rangeland would reduce the prevalence of invasive species. This would reduce the risk of catastrophic wildfire on rangelands, which would destroy native vegetation and wildlife habitats. With healthier native vegetation, wildlife habitat near WWV sites on rangelands would be improved over the long term. Any impacts would not be new.

Individual Effects under Alternative A

CC would not be restored under this alternative, resulting in an increase in rangeland fire fuel load. This could put native vegetation at an increased risk of catastrophic fire, which would destroy wildlife habitat near WWV sites over the long term if it were to occur. Any impacts would not be new.

Individual Effects under Alternative B

Restoration of CC would decrease fire fuel loads and could protect wildlife habitat near WWV sites from catastrophic fire over the long term.

Individual Effects under Alternative C

Option 1

Impacts on WWV sites from rangeland management actions are the same as those under Alternative B.

Option 2

Restoring CC to Class II levels on 70,000 acres would reduce fuel loads on these lands and would protect wildlife habitat at nearby WWV sites from catastrophic fire. However, grazing prohibition would keep fuel loads high on the over three million acres that remain, increasing the risk of fire over the long term.

Individual Effects under Alternative D

Impacts on WWV sites from rangeland management actions are the same as those under Alternative B.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Improving and maintaining meadows and riparian areas would increase human presence and access to these areas, degrading wildlife habitat near WWV sites over the short term. However, healthier native vegetation that would result from this improvement and maintenance would improve habitat value over the long term. Any impacts would not be new.

The extent of riparian and wetland areas within the WDO is limited, and WWV sites are localized. As such, impacts on WWV sites from riparian and wetland management actions would be limited and localized. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative A

Actions near nesting migratory birds would be restricted to minimize human and vehicle presence, noise, and other disturbance, which could limit public access and vegetation improvement treatments. This would have impacts similar to those described under Methods and Assumptions, above. However, these restrictions would also foster undisturbed habitat, which would improve WWV sites. Any impacts would not be new.

Individual Effects under Alternative B

Reintroducing or transplanting big game species could improve WWV sites by attracting more visitors. However, these animals could directly and indirectly impact WWV sites by trampling, browsing, and spreading or introducing weeds, causing decreased plant vigor or plant mortality and altered stand composition. This would degrade wildlife habitat value for other wildlife species.

Under Alternative B, the fewest restrictions would be placed on actions near nesting migratory birds. This could limit public access or the type and timing of vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above. Restrictions would foster undisturbed habitat, which would improve WWV sites.

Individual Effects under Alternative C

Reintroducing or transplanting big game species could impact WWV sites in ways similar to Alternative B.

The most restrictions would be placed on actions near nesting migratory birds. This could place the most limits on public access or the type and timing of vegetation improvement treatments, which would have impacts similar to those under Methods and Assumptions, above. Restrictions would have the greatest impact in fostering undisturbed wildlife habitat, which would improve WWV sites.

Individual Effects under Alternative D

Reintroducing or transplanting big game species could impact WWV sites in ways similar to Alternative A. Restrictions, similar to those described under Alternative A, would be placed on actions near nesting migratory birds.

Effects from Special Status Species Management

Effects Common to All Alternatives

Special status species management across all alternatives would prevent activities leading to listing of species and would require plant inventories, sage-grouse, pygmy rabbit, bat, and raptor avoidance and mitigation and monitoring. Avoiding actions that impact listed or sensitive species or their habitat could limit WWV site use by prohibiting human presence and noise in certain areas. This also could preclude implementing treatments that would improve ecosystem health and plant community composition. Impacts would vary with the type of treatment proposed and the nature and extent of the restrictions. However, restrictions would help to recover the species, thus increasing the number and type of species available for viewing at the WWV site in the long term. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Managing wild horses and burros within HMAs and HAs could impact wildlife habitat near WWV sites by concentrating soil compaction and browsing into defined areas. This would concentrate such impacts as weed invasion and plant reduction in certain areas, while preventing impacts in other areas. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Wildfire suppression would prevent catastrophic destruction of vegetation and would preserve wildlife habitat near WWV sites over the long term. Minimum impact suppression tactics would minimize unanticipated effects on wildlife habitat during fire suppression. Any impacts would not be new.

Fuels management actions would reestablish native vegetation communities, providing for healthy vegetation and wildlife habitat over the long term. These actions would allow fire to play its natural role more frequently and would reduce the likelihood of catastrophic wildfire, which would protect habitat near WWV sites over the long term. Any impacts would not be new.

Implementing a response to wildfires, based on social, legal, and ecological consequences of the fire, would protect wildlife habitat near WWV sites from catastrophic fire over the long term. Any impacts would not be new.

Overall, fire management would help to improve wildlife habitat, making WWV sites more attractive to wildlife, which could increase visitor use of these areas.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Protection of cultural resources, such as aspen art trees and groves, would prevent disturbance and fragmentation of forests, which would indirectly protect wildlife habitat. However, these protections may limit visitation or the type of vegetation improvement treatments that could be implemented; impacts are similar to those described under Methods and Assumptions. These areas are small, relative to the total area of the WDO, so impacts would be localized and would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Tribal Consultation

Effects Common to All Alternatives

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This would indirectly limit disturbance and improve wildlife habitat where identified areas occur near WWV sites over the long term. Any impacts would not be new.

Individual Effects under Alternative A

There are no impacts because there are no actions that are likely to affect WWV sites.

Individual Effects under Alternative B

Impacts are the same as those under Alternative A.

Individual Effects under Alternative C

Impacts are the same as those under Alternative A.

Individual Effects under Alternative D

Impacts are the same as those under Alternative A.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Visual Resources Management

Effects Common to All Alternatives

Implementing VRM guidelines would prevent disturbance and would protect wildlife habitat. However, VRM guidelines could increase the difficulty of accomplishing vegetation management actions by limiting the extent or effectiveness of restoration efforts, such as logging or thinning. This could prevent improvement of wildlife habitat near WWV sites. Any impacts would not be new.

Individual Effects under Alternative A

Under Alternative A, 420,271 acres and 346,302 acres would be managed to VRM Class I and II guidelines, respectively. These actions would limit the scope of logging, thinning, or prescribed burning and would prohibit treatments and prescriptions that would change the visual character. Overall, meeting VRM Class I and II guidelines would increase the difficulty of improving wildlife habitat and would indirectly limit the extent or effectiveness of the management goals. Wildlife habitat would be protected as described under Effects Common to All Alternatives. Any impacts would not be new.

Individual Effects under Alternative B

Under Alternative B, 417,605 acres and 391,203 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the least restrictive to disturbance near WWV sites. Impacts are similar to those described under Alternative A.

Individual Effects under Alternative C

Under Alternative C, 417,605 acres and 3,083,211 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the most restrictive to disturbance near WWV sites.

Individual Effects under Alternative D

Under Alternative D, 417,605 acres and 2,780,416 acres would be managed to VRM Class I and II guidelines, respectively. Impacts are similar in magnitude to those described under Alternative C.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Collecting monitoring data may help to improve rangelands and reduce the spread of weeds. This would, in turn, reduce the likelihood of catastrophic fire that would destroy native vegetation. As such, wildlife habitat near WWV sites would be protected, and any impacts would not be new.

Individual Effects under Alternative A

Livestock grazing would continue to be allowed on 8,232,727 acres of land under this alternative, which would have the greatest impact on wildlife habitat. Grazing, including grazing on acquired lands, and range improvement actions would reduce fuel loads on these lands, making catastrophic fire less likely over the long term. This would indirectly allow for the maintenance and preservation of WWV sites within the WDO. Any impacts would not be new.

Riparian areas would be protected, preventing impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds. This would maintain plant vigor, stand composition, and fire regimes, which would indirectly improve wildlife habitat near WWV sites over the long term. Any impacts would not be new.

Individual Effects under Alternative B

Impacts under Alternative B are similar to those described under Alternative A.

Individual Effects under Alternative C

Option 1

Livestock grazing would be allowed on 8,038,084 acres of land under this alternative, which would have slightly less of an impact than would Alternative B. Grazing and range improvement would reduce fuel loads, making catastrophic fire to WWV sites less likely over the long term. Grazing would not be permitted on acquired land, increasing the risk of fire in nearby WWV sites.

Greater protection would be given to riparian woodlands, requiring the restoration and maintenance of biological integrity in these areas. This would prevent impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds and would maintain plant vigor, stand composition, and fire regimes. This would indirectly protect wildlife habitat near WWV sites over the long term.

Option 2

The no grazing option would not use livestock grazing to reduce fuel loads, increasing the risk of catastrophic fire in WWV sites. However, this alternative would give greater protection to riparian woodlands, as under Alternative C, Option 1.

Individual Effects under Alternative D

Alternative D would have 8,016,754 acres of land open to grazing. Impacts are similar to those described under Alternative A, except that fewer acres of land would be open to grazing.

Effects from Minerals Management

Effects Common to All Alternatives

Impacts on WWV sites could result from fluid, leasable, and locatable mineral development and mineral material sales or disposal. Direct impacts associated with these actions include loss of or injury to plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered so as to prevent future vegetative growth. This would degrade wildlife habitat near WWV sites.

Under all alternatives, BMPs would be implemented, and revegetation concurrent with the operation would be required, thus minimizing and mitigating impacts. Unnecessary roads would be closed to reduce fragmentation and restore habitat. In addition, special status species habitat would be avoided, thus protecting some WWV sites.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists. The assumption is that reasonable foreseeable development actions that are incompatible with objectives, goals, and actions for WWV sites would not be allowed, thereby protecting the special values of these areas.

Individual Effects under Alternative A

Under Alternative A, the greatest amount of acreage would be open to leasable fluid and solid minerals activities and the fewest acres would be closed. Areas open to salable mineral materials disposal would be subject to stipulations only on a case-by-case basis, which would likely result in less wildlife resource protection, which could reduce the value of WWV sites. Alternative A maintains the greatest amount of acreage to locatable minerals, with only minimal closures. Approximately 60 percent of the area open to locatable minerals would be subject to requirements for special handling and additional stipulations for wildlife resource protection. Alternative A would result in the greatest impacts from minerals management because it places the fewest restrictions on areas available for mineral development and the fewest restrictions on operations that could impact wildlife habitat and WWV sites.

Individual Effects under Alternative B

Under Alternative B, fewer acres would be open to leasable fluid and solid minerals activities, and more acres would be closed than under Alternative A. Acreage that would be open to salable mineral materials disposal is similar to Alternative A, but most of the area would be subject to standard authorization terms, which would likely result in greater wildlife habitat protection than under Alternative A. Impacts from salable minerals management are the same as those under Alternative A.

Individual Effects under Alternative C

Under Alternative C, the fewest acres would be maintained for locatable minerals and leasable fluid and solid minerals activities, and the greatest number of acres would be closed. Acreage open to salable mineral materials disposal would be less than under Alternatives A and B, and most of the area would be acres open solely to permitted government agencies. This would likely result in increased wildlife habitat protection from proper management and resource consideration in pursuing mineral interests. Overall, Alternative C would result in the least amount of impacts on WWV sites from minerals management. This is because Alternative C would close the most area to mineral development and would place the most restrictions to protect wildlife resources in areas available for mineral development.

Individual Effects under Alternative D

Effects are similar to those described under Alternative B, except more acres would be closed to mineral development and more acres of the public lands open to leasing would be subject to NSO stipulations and seasonal closures to protect wildlife and habitat. Alternative D would have the fewest acres open to salable mineral materials disposal. Standard authorization terms and seasonal closures would be applied in some areas and would reduce impacts on wildlife and their habitats. Management actions would help to reduce impacts on WWV sites over the long term.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Managing BLM-administered lands to provide dispersed recreation could directly degrade wildlife habitat near WWV sites throughout the WDO through human disturbance, noise, weed introduction or spread, and impacts on vegetation. Impacts would vary, depending on the type of activities allowed in the area, and could be short term and long term. Any impacts would not be new.

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, including WWV sites. Site-specific NEPA analysis would be done on an implementation level to minimize impacts on WWV sites.

Individual Effects under Alternative A

Under Alternative A, there would be no camping limitations or prohibitions throughout the WDO. In addition, the Pine Forest SRMA would be maintained, and issuance of special recreation permits would be the least restricted. The greatest acreage (6,782,790 acres) would be open to OHVs under Alternative A, with the least amount of land (416,652 acres) limited and with 24,832 acres closed.

Combined, these actions would allow for disturbance to wildlife from increased human presence, OHV use, trail creation, and noise. This, in turn, could compact soils, trample vegetation, and increase dust, which could decrease plant vigor and alter stand composition of areas throughout the WDO. As a result, wildlife habitat near WWV sites would be directly and indirectly degraded. Any impacts would not be new.

Individual Effects under Alternative B

Camping limitations and prohibitions throughout the ERMA would minimize impacts on WWV sites on these lands. In addition, designating three SRMAs would impact WWV sites to varying degrees, depending on the proximity of the SRMA to the WWV site and on the recreation market identified for the SRMA. For example, the Nightingale SRMA would be targeted for undeveloped recreation-tourism, which would have less of an impact than Winnemucca and Pine Forest SRMAs, which allow for increased motorized vehicle access. Under Alternative B, 1,460,200 acres would be open to OHVs, with the least amount of land (24,832 acres) closed and with 5,445,218 acres limited. Together, impacts from these actions include increased human and vehicle presence, noise, soil compaction, vegetation trampling, wildlife disturbance, and increased dust. These impacts could decrease plant vigor, alter stand composition, and degrade WWV sites throughout the ERMA, SRMAs, and OHV routes. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Issuance of special recreation permits would be the least restrictive under this alternative, which could cause some impacts on WWV sites through increased human use, trampling, litter, and noise disturbance.

Individual Effects under Alternative C

Camping limitations and prohibitions throughout the ERMA would minimize impacts on WWV sites on these lands. In addition, designating two SRMAs would have impacts on WWV sites similar to those described under Alternative B. Under Alternative C, no acres within the WDO would be open to OHVs, with 61,427 acres closed and 7,143,177 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Impacts from recreation actions would be lowest under this alternative, as it is the most restrictive and prohibitive. However, impacts would occur that are similar to those described under Alternative B.

Issuance of special recreation permits would be the most restrictive under Alternative C and would cause the least impact on WWV sites through increased human use, trampling, litter, and noise disturbance.

Individual Effects under Alternative D

Camping limitations and prohibitions throughout the ERMA would minimize impacts on WWV sites on these lands. In addition, designation of three SRMAs would have the same impacts on WWV sites as those described under Alternative B. Under Alternative D, 289,932 acres would be open to OHVs, with 35,483 acres closed and with 6,878,592 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and

site-specific NEPA analysis is completed. Together, impacts from these actions are similar to those described under Alternative B.

Issuing special recreation permits would cause some impacts on WWV sites through increased human use, trampling, litter, and noise disturbance.

Effects from Renewable Energy Management

Effects Common to All Alternatives

Impacts on WWV sites could occur with issuance of new ROWs, which require vegetation clearing and access roads and would increase human presence, machinery, noise, weed potential, and habitat fragmentation. Over the long term, this could degrade wildlife habitat value if development occurs near WWV sites. BMPs, stipulations, and mitigation measures would be implemented to minimize impacts. Any impacts would not be new.

Individual Effects under Alternative A

Maintaining existing exclusion areas within the WDO would protect and limit disturbance to vegetation and habitat and would prevent weed invasion or spread caused by development. Over the long term, this would protect wildlife habitat where exclusion areas encompass WWV sites. Any impacts would not be new.

Individual Effects under Alternative B

Designating avoidance areas within the WDO would protect and limit disturbance to vegetation and habitat and would prevent weed invasion or spread caused by development. Over the long term, this would protect wildlife habitat where avoidance areas encompass WWV sites.

Individual Effects under Alternative C

Designating avoidance areas and exclusion zones within the WDO would have the greatest impact on WWV sites by protecting and limiting disturbance to vegetation and habitat and by preventing weed invasion or spread. Over the long term, this would protect wildlife habitat where avoidance areas and exclusion zones encompass WWV sites.

Individual Effects under Alternative D

Designating avoidance areas and exclusion zones within the WDO would impact WWV sites by protecting and limiting disturbance to vegetation and habitat and by preventing weed invasion or spread. Over the long term, this would protect wildlife habitat where avoidance areas and exclusion zones encompass WWV sites.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression would allow for increased human presence, noise, and access to certain areas, which would degrade wildlife habitat near WWV sites. However, roads

would allow for suppression of wildfires when necessary, which would protect native vegetation and wildlife habitat over the long term. Any impacts would not be new.

Vegetation improvement actions, such as noxious weed control measures, would have impacts similar to those described under Methods and Assumptions, at the beginning of this chapter. Any impacts would not be new.

Individual Effects under Alternative A

Transportation actions under Alternative A would not protect wildlife, sensitive species, or their habitats. As a result, wildlife habitat near WWV sites could be impacted by road and trail construction from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Individual Effects under Alternative B

Transportation actions to minimize effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and habitat and would prevent weed invasion or spread from road or trail construction. This would protect wildlife habitat near WWV sites over the long term.

Individual Effects under Alternative C

Impacts are similar to those described under Alternative B.

Individual Effects under Alternative D

Impacts are similar to those described under Alternative B.

Effects from Lands and Realty Management

Effects Common to All Alternatives

Vegetation and wildlife habitat value would be given consideration when the WDO makes disposal and acquisition decisions, which could indirectly protect wildlife habitat near WWV sites over the long term. Any impacts would not be new.

Individual Effects under Alternative A

Issuance of ROWs would not be limited, and avoidance areas or exclusion zones for lands and realty management actions would not be designated under Alternative A. Wildlife habitat near WWV sites could be directly impacted from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Individual Effects under Alternative B

Designating avoidance areas would have impacts similar to the renewable energy management actions under Alternative B.

Lack of restriction on ROW issuance could directly impact wildlife habitat near WWV sites via vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust. This would degrade WWV sites over the long term.

Individual Effects under Alternative C

Designating avoidance areas and exclusion zones would have impacts similar to renewable energy management actions under Alternative C.

Restricting ROW issuance could directly impact wildlife habitat near WWV sites by protecting and limiting vegetation disturbance, habitat fragmentation, and weed invasion or spread from road construction.

Individual Effects under Alternative D

Designating avoidance areas and exclusion zones would impact wildlife habitat near WWV sites by protecting and limiting disturbance to vegetation and habitat and by preventing weed invasion or spread.

Lack of restriction on ROW issuance could directly impact wildlife habitat near WWV sites through vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from National Trails Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

WWV sites would provide educational opportunities for viewing wildlife and associated habitat. Human use of WWV sites could degrade nearby wildlife habitat in the long term by increasing noise and trampling vegetation.

Individual Effects under Alternative A

Impacts are the same as those under Effects Common to All Alternatives.

Individual Effects under Alternative B

Impacts are the same as those under Effects Common to All Alternatives.

Individual Effects under Alternative C

Alternative C would provide additional protection to wildlife habitat by avoiding new routes through sensitive or remote areas. This would help to maintain relatively undisturbed wildlife habitat, which would enhance WWV sites.

Individual Effects under Alternative D

Impacts are the same as those under Effects Common to All Alternatives.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no impacts because there are no actions that are likely to affect WWV sites.

Cumulative Effects

Past actions and events contributing to cumulative effects within or adjacent to watchable wildlife viewing sites have resulted primarily from surface-disturbing activities and population growth.

Use of natural resources within the WDO planning area is expected to remain at current or slightly increased levels. As a result, surface-disturbing activities affecting watchable wildlife viewing sites could continue. However, the BLM would maintain discretionary authority over most land uses and would permit only those actions that would not impair or conflict with watchable wildlife viewing sites, reducing cumulative effects on these areas. As the population increases, activity and use within or adjacent to watchable wildlife viewing sites increases. An increasing population could continue to build housing closer to watchable wildlife viewing sites, thereby affecting the quality of natural resources associated with watchable wildlife viewing sites.

4.5 SOCIAL AND ECONOMIC

4.5.1 Tribal Interests

Summary

This section presents potential effects from management actions on Native American tribal economic interests, such as Indian Trust Assets (ITAs), treaty-based rights, and reservation lands. Indian Trust Assets are legal interests in property, physical assets, or intangible property rights held in trust by the United States for Indian tribes or individual Indians. There are no known Indian Trust Assets or treaty-based rights or responsibilities of the BLM in the planning area, which includes the Lovelock Paiute Reservation, Fort McDermitt Reservation, Battle Mountain Reservation, Summit Lake Reservation, and Winnemucca Colony Reservation. Impacts on Native American values, traditional uses, and traditional cultural properties are discussed in Section 4.2.13, Cultural Resources.

Overall socioeconomic effects from management actions are discussed in Section 4.5.3, Social and Economic Conditions and Environmental Justice. Effects on tribal economic interests on reservation lands are likely similar to those of other residents in rural low-income parts of the planning area. Under Alternatives C and D, on congressional approval, lands would be transferred to the Bureau of Indian Affairs for the expansion of the Fort McDermitt Indian Reservation. Expansion of the reservation land base may permit additional economic development and income to the reservation.

Table 4-54 identifies the indicators that were used to analyze effects on tribal interests.

Table 4-54
Summary of Effects on Tribal Interests—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
The extent that the action affects Indian Trust Assets or treaty-based rights	No Change	No Change	No Change	No Change
The extent that the action affects reservation economic development	No Change	No Change	Increased Land Base	Increased Land Base

Methods of Analysis

Methods and Assumptions

Tribal interests considered in this analysis are based on economic rights established by treaty and the unique trust relationship between tribes and the federal government. The federal trust responsibility includes the obligation to protect tribal lands, trust assets, and treaty-based rights.

There are no assets in the WDO that are formally held in trust for tribes by the BLM, nor are there treaty-based rights to resources on lands managed by the WDO. The Bureau of Indian Affairs administers 22,298 acres of reservation land within the WDO.

General effects on tribal economic interests on reservation lands are likely similar to those of other residents in rural low-income parts of the planning area, as described in Section 4.5.3, Social and Economic Conditions and Environmental Justice.

Cultural and traditional tribal uses of the WDO include gathering and harvesting plants, medicines, material, hunting, fishing, and ceremonial and religious use. Effects on traditional cultural properties, sacred sites, culturally important natural resources, traditional practices, and tribal access are discussed in Section 4.2.13, Cultural Resources.

The BLM, as a federal agency, would continue to maintain government-to-government relationships with federally recognized Indian tribes and would consult with tribes during resource management planning affecting tribal lands and resources.

Effects from Air Quality Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Geology Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Soil Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Water Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Vegetation - Weeds Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Vegetation - Rangeland Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Special Status Species Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Wildland Fire Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Cultural Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Tribal Consultation

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Visual Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Minerals Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Renewable Energy Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Transportation and Access Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Lands and Realty Management

Effects Common to All Alternatives

There are no effects common to all alternatives from lands and realty management.

Individual Effects under Alternative A

Under Alternative A there would be no effect on Indian Trust Assets or treaty-based rights. The reservation land base would not be expanded as it would under Alternatives C and D. The reservation would not benefit from any economic development and income that a larger land base may permit.

Individual Effects under Alternative B

Under Alternative B there would be no effect on Indian Trust Assets or treaty-based rights. The reservation land base would not be expanded as it would under Alternatives C and D. The reservation would not benefit from any economic development and income that a larger land base may permit.

Individual Effects under Alternative C

Under Alternative C, on congressional approval, the BLM would transfer lands to the Bureau of Indian Affairs for expanding the Fort McDermitt Indian Reservation. Expanding the reservation land base may permit additional economic development of and income to the reservation.

Individual Effects under Alternative D

Under Alternative D, on congressional approval, the BLM would transfer lands to the Bureau of Indian Affairs for expanding the Fort McDermitt Indian Reservation. Expanding the reservation land base may permit additional economic development of and income to the reservation.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from National Trails Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Effects from Sustainable Development Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Cumulative Effects

Past, present, and future trends and projects that could impact Native American tribal economic interests in the planning area include minerals and energy development, population increases and recreational use in parts of the planning area, and expansion of existing tribal enterprises and visitor services. There are no ITAs or treaty-based rights present that would be affected. Anticipated economic growth in rural parts of the planning area is expected to be incremental among all the alternatives, with the most potential growth under Alternative B. Expanding Fort McDermitt reservation land under Alternatives C and D may permit greater opportunities for tribal economic development than may occur otherwise in those areas.

4.5.2 Public Health and Safety

Summary

Nearly all management activities on the WDO lands could affect public safety to some extent. The main goal for public safety as a resource is to protect people from natural or human-caused hazards encountered on public lands. Essentially, any management activity that improves access to or encourages use of BLM-administered lands also increases the likelihood that the public and BLM employees could come into contact with abandoned mine lands, modern mine pits, high walls and pit lakes, hot springs, and hazardous material sites, including solid waste, illegal dump sites, and unexploded ordinance or explosives. However, improving access in the resource area could reduce the number of accidents that result from poor travel conditions. Reducing access could hinder efforts to identify, remediate, and monitor hazardous sites. The proposed public safety management

plan is concerned with identifying, tracking, and protecting the public from exposure to hazardous conditions, as well as taking corrective action on sites where those conditions occur.

The Nevada BLM initiated the Abandoned Mine Lands Program to remediate physical safety hazards. These hazards result from historic mining activity, historic watershed and chemical contamination sites, such as old mill sites or tailings impoundments, and modern mines and mill sites that have insufficient reclamation bonding and have been abandoned or become bankrupt. Current management works under the Abandoned Mine Lands Program to remove or remediate dangerous situations and materials when discovered. Remediation of abandoned mine hazards are prioritized by the potential for public exposure through access and proximity to populated areas and recreational uses. Increased public exposure to abandoned mine lands hazards would increase the priority to remediate those hazards in a timely manner. All alternatives would continue this work and add procedures and safeguards for hazardous sites, including removing hazards, protecting significant sites, and stabilizing or limiting accessibility of abandoned mine lands and other hazardous sites when removal of hazards is not practical. Alternative C has some added restrictions associated with recreation, visitor outreach and services management, geology management, and chemical and biological control of vegetation management, on abandoned mine lands and hazardous sites. These restrictions exceed those under Alternatives A and B and are nearly the same as those under Alternative D. Long-term management of completed projects should include periodic maintenance and monitoring to determine success and stability of these measures.

The WDO provides for public safety at hot springs by posting and maintaining warning signs at dangerous hot springs with temperatures above 100 degrees Fahrenheit. Hot springs with temperatures above 120 degrees Fahrenheit are fenced and posted to limit entry and to warn the public of the hazards.

Methods of Analysis

Methods and Assumptions

The alternatives were reviewed for actions that would affect the public health and safety from exposure to hazardous sites, including naturally occurring hazards on abandoned mine lands, modern mining pits, and pit lakes, based on the following assumptions:

- The population of the western United States will continue to increase and will likely result in a corresponding increased demand for accessible, open-space recreational use of the WDO planning area. Certain special use events, such as Burning Man, will continue to attract visitors from outside the region;
- Increased use or improved access will result in increased exposure to abandoned mine lands, hot springs, hazardous material or illegal dump sites, exposure to modern mining operations and other hazards, such as explosives or unexploded ordinance;
- Increased exposure to hazardous sites will require reprioritization of remediation for abandoned mine lands or other hazardous sites;
- SOPs and BMPs are in place for the use of chemical and biological controls for vegetation treatments and wildlife damage management;

- Promotion of the areas within the WDO as vacation and outdoor recreational destinations by certain interested parties will continue and potentially will result in an increasing number of visitors encountering hazards on public lands; and
- Interest in mineral extraction on public lands within the WDO will persist.

Effects from Air Quality Management

Effects Common to All Alternatives

Air quality management objectives would generally provide for public health and safety by minimizing airshed degradation. BMPs are incorporated into remedial actions at abandoned mine lands and other hazardous sites to minimize impacts on air quality. The air quality program would have little bearing on ground-disturbing remediation activities in terms of fugitive dust and other emissions.

Effects from Geology Management

Effects Common to All Alternatives

There are no effects common to all alternatives from geologic resource management.

Individual Effects under Alternative A

There are no actions under this alternative that would affect public health and safety.

Individual Effects under Alternative B

Alternative B, like Alternative D, promotes scientific, educational, and recreational use and access to unique geological features with the development of recreational trails. Increased access to public lands increases the likelihood of exposure to health and safety risks at abandoned mine lands and other hazardous sites. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards.

Individual Effects under Alternative C

Alternative C would not promote scientific, educational, and recreational use and access to unique geological features with the development of recreational trails. Under these options, such media as pamphlets and news releases encouraging protection of unique geologic resources on public land would be made available without encouraging visitation. Increased access to public lands increases the likelihood of exposure to health and safety risks at abandoned mine lands, hazardous materials sites, and other hazardous sites. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards.

Individual Effects under Alternative D

Alternative D, like Alternative B, promotes scientific, educational, and recreational use and access to unique geological features with the development of recreational trails. Increased access to public lands increases the likelihood of exposure to health and safety risks at abandoned mine lands and other hazardous sites. Under this alternative, areas containing unique geologic resources would be

designated as exclusion zones for ROWs and other discretionary actions and would be closed to salable mineral disposal.

Effects from Soil Resources Management

Effects Common to All Alternatives

Soils management could have a measurable impact on public safety. Actions that specify the avoidance of sensitive land types, which should include some abandoned mine lands and hazardous sites, would be protective of public safety. For example, wind erosion can have a major impact on public safety and transportation corridors because burned areas are often near or surround transportation corridors such as Interstate 80, State Highways 95 and 140. Fatal vehicle accidents have occurred from reduced visibility. Windblown soil has resulted in temporary closures of the Interstate and highways affecting transportation of commodities and interstate commerce. Implementing BMPs for projects that entail soil-disturbing activities under erosion protection, site stabilization, and better vegetative cover would reduce exposure and movement of contaminated soils and also would reduce runoff and flood potential. Soils management would be an intrinsic part of the mitigative and remediable ground-disturbing activities of the abandoned mine lands and hazardous sites.

Effects from Water Resources Management

Effects Common to All Alternatives

Water resources management goals and objectives would complement hazardous site cleanup efforts across alternatives. Watershed and stream improvements would reduce the potential for erosion and migration of contaminants. Alternatives B, C, and D would have greater potential to help improve watershed health. Actions to maintain, improve, and restore water quality, including compliance with state and federal standards and regulations to protect watersheds and continued implementation of BMPs, would be applicable to the remediative and restorative programs for abandoned mine lands and hazardous sites.

Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

Fuels reduction with a more resilient forest, similar to historic conditions, would help ensure public safety from the standpoint that the public would be less likely to be injured by wildfire. Logging within the WUI would reduce the risk of wildfire to communities and private property. Also, this logging would have an indirect effect on public health and safety from the standpoint of protecting the public from wildfire injury. However, forest management actions could cause undesirable ground disturbance on or around abandoned mine lands and hazardous materials sites. The potential for impacts due to risks associated with exposure to mine hazards and hazardous materials depends on the amount of timber harvested, which would vary by alternative.

Effects from Vegetation - Weeds Management

Effects Common to All Alternatives

Weeds management would affect public safety. The invasive species and noxious weeds program could help control weeds in and around these types of sites. However, the removal of such flora without rapid implementation of other measures could further impact on-site and off-site conditions through release of airborne soil and disturbance of sediments. Weed control is part of public safety cleanup and follow-up efforts. The revegetation of areas treated for weeds would complement the objectives of the abandoned mine lands and hazards remediation.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

Chemical and biological weed control could cause short-term impacts on public health and safety. SOPs and BMPs are in place governing the use of chemical and biological controls. An approved pesticide use proposal is required before applying pesticides on public lands or as provided by current policy to reduce effects on public safety.

Individual Effects under Alternative A

No pesticides or herbicides would be applied to streams, lakes, or reservoirs unless adverse impacts could be adequately mitigated. Access to lands and water with applied pesticides could affect public safety. An approved pesticide use proposal is required before applying pesticides on public lands or as provided by current policy to reduce the effects on public safety. SOPs, BMPs, or mitigation measures would be employed to ensure terrestrial and aquatic pesticides are appropriate for the intended target, place of use, and method of application and to do it in a manner that would avoid unintended effects.

Individual Effects under Alternative B

Alternative B calls for various integrated pest management techniques, such as pesticides and mechanical and biological controls, to control pests. Increased visitor populations and access to lands and water with applied pesticides could affect public health and safety. An approved pesticide use proposal is required before applying pesticides on public lands, or as provided by current policy, to reduce the effects on public health and safety. SOPs, BMPs, or mitigation measures would be employed to ensure terrestrial and aquatic pesticides are appropriate for the intended target, place of use, and method of application and to ensure that they are implemented in a manner that would avoid unintended effects.

Individual Effects under Alternative C

Alternative C includes the use of various integrated pest management techniques, such as mechanical and biological, for pest control. Methods other than chemical treatments are to be used to minimize adverse impacts on wildlife, other animals, and the public, based on Action C-PE 1.1 in Chapter 2. SOPs, BMPs, or mitigation measures would be employed to ensure terrestrial and aquatic pesticides are appropriate for the intended target, place of use, and method of application and to ensure that they are implemented in a manner that would avoid unintended effects.

Individual Effects under Alternative D

Impacts are the same as those described under Alternative B.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

The lack of vegetation on abandoned mine lands and other hazardous sites may not be affected by improving rangeland conditions, which would affect site stability and public safety on sites that have been overgrazed.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Some abandoned mine lands and hazardous materials sites have limited vegetation that could add to sediment load or contamination of streams. All the alternatives would improve streams and establish riparian habitat buffers that help remove and store contaminants generated by abandoned mine lands and hazardous materials sites. The differences among alternatives would not result in measurable impacts on public safety.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

The Fish and Wildlife Management objectives to restore, protect, and improve wildlife habitat by using management tools, including prescribed fire and wildfire use, vegetation manipulation (mechanical, biological, and chemical treatments), seeding, fencing and use restrictions, could affect public health and safety. Affects on public safety would be similar to those of wildland fire management and vegetation management objectives because similar management tools would be used. Conserving and restoring fish, waterfowl and shorebird habitats would improve water quality, thereby enhancing public health. Moreover, it would promote actions that achieve good quality aquatic and riparian habitats. The differences among alternatives would not result in measurable impacts on public safety.

Effects from Special Status Species Management

Effects Common to All Alternatives

The Special Status Species Management objectives work in conjunction with the objectives of Public Safety Management. Protecting sensitive species habitat by implementing mitigation measures to reduce adverse impacts could reduce the amount of contact the public has with abandoned mine lands and hazardous sites and therefore protect public safety. Mitigation measures include avoidance, no surface occupancy, buffer zones, seasonal restrictions, off-site mitigation, use restrictions, and rehabilitation. The differences among alternatives would not result in measurable impacts on public safety.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

WHB grazing could impact public health and safety where grazing animals gain access to disturbed sites, resulting in increased site disturbance. Grazing could also reduce or degrade vegetation used to stabilize conditions on or near abandoned mine lands and other hazardous materials sites. Range improvements also could disturb hazardous materials, as could weed control efforts. Many abandoned mine lands and hazardous materials sites have limited vegetation, so improving rangeland conditions would affect site stability and public safety if overgrazing had occurred. Improving watershed conditions would help protect such sites as contaminated floodplains. Improved range management can also improve and control access, which can also help protect the public from hazard conditions. Impacts would depend on the character of specific allotments. Overall, impacts from WHB grazing management on public health and safety would not affect long-term rehabilitation and stability of sites.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Wildfire management under all alternatives would affect public safety by reducing the likelihood that the public would be injured by wildfire. The FMPs would help protect abandoned mine lands remediation projects across alternatives.

Effects from Cultural Resources Management

Effects Common to All Alternatives

Cultural resources management could preserve old mine structures, which could threaten public safety because of chemical and physical hazards. Such inventories would aid in abandoned mine lands and hazardous site identification.

Effects from Tribal Consultation

Effects Common to All Alternatives

Native American tribal uses could impact public safety across alternatives by encouraging Native Americans to access traditional use areas for collecting, hunting, and other traditional uses, which could also expose them to hazardous sites.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

No actions for paleontological resources management would affect public health and safety.

Effects from Visual Resources Management

Effects Common to All Alternatives

No actions from visual resources management would affect public health and safety.

Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

The objective of cave and karst management is to protection unique geologic features, to promote public safety, and to protect wildlife habitat. While Alternative C would not identify undiscovered sites or promote increased visitation, all alternatives would provide public education about cave and karsts. Increased education would decrease public safety concerns associated with caves and karsts.

Individual Effects under Alternative A

See Effects Common to All Alternatives.

Individual Effects under Alternative B

An inventory would be completed under Alternatives B to identify significant cave and karst resources. Such an inventory would aid in abandoned mine lands and hazardous site identification.

Individual Effects under Alternative C

An inventory would be completed under Alternatives C to identify significant cave and karst resources. Such an inventory would aid in abandoned mine lands and hazardous site identification.

Individual Effects under Alternative D

An inventory would be completed under Alternatives D to identify significant cave and karst resources. Such an inventory would aid in abandoned mine lands and hazardous site identification.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Livestock grazing could impact public health and safety where grazing animals gain access to disturbed sites, resulting in increased site disturbance. Grazing could also reduce or degrade vegetation used to stabilize conditions on or near abandoned mine lands and other hazardous materials sites. Range improvements also could disturb hazardous materials, as could weed control efforts. Many abandoned mine lands and hazardous materials sites have limited vegetation, so improving rangeland conditions would affect site stability and public safety where overgrazing has occurred. Improved range management could also improve and control access, which could help protect the public from hazardous conditions. Impacts would depend on the character of specific allotments. Alternative C, Option 2 would not allow grazing, unlike the rest of the alternatives, and could increase abandoned mine lands and hazardous materials site natural vegetation and site stability by restricting grazing. Overall, impacts from livestock grazing management on public health and safety would not affect long-term rehabilitation and stability of sites.

Effects from Minerals Management

Effects Common to All Alternatives

Minerals management would impact public safety and the efforts of the abandoned mine lands programs. The maintenance of corrective actions and needed remediation of physical and chemical hazards at abandoned mine lands sites that are later claimed under the mining law, would become the responsibility of the mining claimant. The efforts of the claimants to secure hazardous conditions on active claims would reduce the workload of the abandoned mine lands program. Modern mining operations on abandoned mine lands could eliminate the associated hazards through mining or processing and could improve public health and safety. Insufficiently bonded modern mining sites that are abandoned or affected by bankruptcy would impact public safety and the efforts of the abandoned mine lands programs by adding the need for physical safety closures or environmental cleanup measures to eliminate any remaining physical or chemical hazards.

Individual Effects under Alternative A

Salable

Alternative A would continue to limit public exposure to physical and chemical hazards resulting from salable mineral extraction to the resource area outside the 418,938 acres maintained as closed to mineral material disposal.

Fluid

Alternative A would continue to limit public exposure to physical and chemical hazards resulting from fluid mineral extraction 446,887 acres maintained as closed to fluid mineral leasing. Under Alternative A, 29,582 acres would continue to be open to leased fluid minerals activities with NSO stipulations, limiting physical hazards in those areas.

Solid

Alternative A continue to limit public exposure to physical and chemical hazards associated with solid minerals extraction to the resource area outside the 416,652 acres closed to solid mineral leasing.

Individual Effects under Alternative B

Salable

Alternative B would limit public exposure to physical and chemical hazards associated with salable mineral extraction to the resource area outside the 418,938 acres closed to mineral material disposal.

Fluid

Alternative B would limit public exposure to physical and chemical hazards associated with fluid mineral extraction to the resource area outside the 1,132,594 acres closed to fluid mineral leasing. Hazards not mitigated under the Minerals Management Plan on areas previously open to fluid mineral leasing could exist. Under Alternative B, 221,724 acres would be open to leased fluid minerals activities with NSO stipulations limiting physical hazards in those areas.

Solid

Alternative B would limit public exposure to physical and chemical hazards associated with solid mineral extraction to the resource area outside the 1,124,266 acres closed to leasing. Hazards not mitigated under the Minerals Management Plan on areas previously open to solid mineral leasing could exist. Under Alternative B, 221,644 acres would be open to solid mineral leasing with NSO stipulations limiting physical hazards in those areas.

Individual Effects under Alternative C

Salable

Alternative C would limit public exposure to physical and chemical hazards associated with salable mineral extraction to the resource area outside the 837,049 acres closed to mineral material disposal. Hazards not mitigated under the Minerals Management Plan on areas previously open to salable mineral disposal could exist.

Fluid

Alternative C would limit public exposure to physical and chemical hazards associated with fluid mineral extraction to the resource area outside the 4,455,026 acres closed to leasing. Hazards not mitigated under the Minerals Management Plan on areas previously open to fluid mineral leasing could exist.

Solid

Alternative C would limit public exposure to physical and chemical hazards associated with solid mineral extraction to the resource area outside the 4,455,645 acres closed to leasing. Hazards not mitigated under the Minerals Management Plan on areas previously open to solid mineral leasing could exist.

Individual Effects under Alternative D

Salable

Alternative D would limit public exposure to physical and chemical hazards associated with salable mineral extraction to the resource area outside the 743,301 acres closed to mineral material disposal. Hazards not mitigated under the Minerals Management Plan on areas previously open to salable mineral disposal could exist.

Fluid

Alternative D would limit public exposure to physical and chemical hazards associated with fluid mineral extraction to the resource area outside the 1,198,464 acres closed to leasing. Hazards not mitigated under the Minerals Management Plan on areas previously open to fluid mineral leasing could exist. Under Alternative D, 326,796 acres would be open to leased fluid minerals activities with NSO stipulations, limiting physical hazards in those areas.

Solid

Alternative D would limit public exposure to physical and chemical hazards associated with solid mineral extraction to the resource area outside the 1,198,694 acres closed to solid mineral leasing. Hazards not mitigated under the Minerals Management Plan on areas previously open to solid mineral leasing could exist. Under Alternative D, 326,743 acres would be open to solid mineral leasing with NSO stipulations, limiting physical hazards in those areas.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Increased recreational demand and use of public lands would increase the likelihood that the public could come into contact with health and safety risks at abandoned mine lands or other hazardous sites. SRMAs, which would be managed for intensive recreation use, increase this likelihood. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards. SRMA activity plans could include remedial actions or restrictions that help protect the public from hazards at abandoned mine lands and other hazardous sites where remedial action have not occurred. Recreation program maintenance, signage, and information efforts could help reduce exposure to physical hazards and other types of hazards that could not be mitigated. Recreation programs assist in collecting solid waste, which would mitigate illicit solid waste dumping. All alternatives except Alternative C have some acreage designated as open. This designation presents the greatest potential for encountering abandoned mine lands, hazardous materials sites, and other hazard sites.

Individual Effects under Alternative A

Alternative A would continue managing existing SRMAs to provide dispersed recreation. Alternative A would continue to maintain current designations of OHV travel, including 24,832 acres closed to OHVs.

Individual Effects under Alternative B

Alternative B would designate three SRMAs. The likelihood that the public could come into contact with abandoned mine lands or other hazardous sites would be increased in these SRMAs. An increase in public exposure would modify current priorities to mitigate abandoned mine hazards to high. Alternative B would increase public awareness of the ethics of responsible land and resource use and promote educational outreach programs, such as Tread Lightly! and Leave No Trace, through public contact, recreation, and tourism partners and the SRP system. Under Alternative B, 24,832 acres would be closed to OHV travel, and 1,460,200 acres would be open to OHV travel. Alternative B would close the fewest acres to OHV travel and could increase the likelihood of exposure to health and safety risks at abandoned mine lands, hazardous materials sites, and other hazard sites. The open designation presents the greatest potential for encountering abandoned mine lands and other hazardous sites.

Individual Effects under Alternative C

Alternative C would designate two SRMAs. The likelihood that the public could come into contact with abandoned mine lands or other hazardous sites would be increased in these SRMAs.

Alternative C would increase public awareness of the ethics of responsible land and resource use. These options would promote educational outreach programs, such as "Tread Lightly!" and "Leave No Trace", through public contact, recreation, and tourism partners and the SRP system. However, Alternative C would not promote visitation of sensitive areas. Under Alternative C, 61,427 acres would be closed to OHV travel, zero acres would be open to OHV travel, and the rest would be designated for limited OHV use. Alternative C would close the most acres to OHV travel of the alternatives and could decrease the likelihood of exposure to health and safety risks at abandoned mine lands and other hazardous sites.

Individual Effects under Alternative D

Alternative D would designate three SRMAs. The likelihood that the public could come into contact with abandoned mine lands or other hazardous sites would be increased in these SRMAs. Alternative D would increase public awareness of the ethics of responsible land and resource use and would promote educational outreach programs, such as Tread Lightly! and Leave No Trace, through public contact, recreation, and tourism partners, and the SRP system. Under Alternative D, 35,483 acres would be closed to OHV travel, 289,932 acres would be open to OHV travel, and the rest would be designated as limited OHV use. OHV travel could increase the likelihood of exposure to health and safety risks at abandoned mine lands and other hazardous sites.

Effects from Renewable Energy Management

Effects Common to All Alternatives

The renewable energy program could affect public health and safety by improving access, thereby exposing the public to health and safety risks at abandoned mine lands sites and hazardous sites. Wind energy, solar energy, and biomass energy sites could present public safety hazards if not properly secured and maintained. Rights-of-way and leases for renewable energy development sites would contain stipulations to provide for public safety and for the continuation of abandoned mine lands and hazard site remediation.

Effects from Transportation and Access Management

Effects Common to All Alternatives

The transportation and travel management program could affect public safety through inadvertently providing access to hazard sites and producing ground-disturbing activity on or near abandoned mine lands and other hazardous sites. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards. All alternatives would improve or decommission roads from the system inventory that are presenting problems to the environment, which could prevent public access to abandoned mine lands and hazardous sites with erosion issues. Improved access could impact public safety by reducing accidents that result from poor travel conditions. Reducing access could hinder efforts to identify, remediate, and monitor hazardous sites. All alternatives would also provide for public safety awareness through sign installation and maintenance programs, while protecting the viewshed.

Effects from Lands and Realty Management

Effects Common to All Alternatives

The lands and realty program could affect public health and safety through inadvertently providing access to hazardous sites, designating rights-of-way or authorizing ground-disturbing activity on or near hazardous sites, or authorizing development near hazardous sites. Rights-of-way would contain stipulations to provide for public safety and for the continuation of abandoned mine lands and hazard site remediation. Environmental site inspections would be required to identify health and safety risks at abandoned mine lands and hazardous sites before offering any public land for sale.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

No actions for ACEC/RNA management would affect public health and safety.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

Backcountry byways management could impact public health and safety across alternatives by increasing access and bringing the public into contact with abandoned mine lands and other hazardous sites, including mines, hazardous materials, solid waste, illegal dump sites, hot springs, and explosives.

Effects from National Trails Management

Effects Common to All Alternatives

No actions for National Trails Management would affect public health and safety.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

No actions for wild and scenic river management would affect public health and safety.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

No actions for Wilderness Study Areas and Wilderness Characteristics Management would affect public health and safety.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Watchable wildlife viewing sites could impact public safety across alternatives by increasing access and bringing the public into contact with abandoned mine lands and other hazardous sites.

However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

The Abandoned Mine Lands Program focuses on immediate and urgent threats to human health and the environment. Most of the hazardous materials issues are associated with illegal dumping, chemicals, unexploded ordnance or explosives, past mining activities, and abandoned mine lands. The following are management actions that could reduce BLM employees' and the public's health risk and exposure to abandoned mine lands sites, hazardous materials sites, solid waste sites, and other hazard sites:

- Continuing to work with the Abandoned Mines Program;
- Maintaining and improving inventories of abandoned mine lands sites and hazardous materials sites;
- Inspecting and mitigating physical and chemical hazards to ensure public safety;
- Prioritizing mitigation at sites where the risk of public exposure to hazards is increasing due to use or proximity to population growth;
- Correcting physical hazards and cleaning up and reclaiming hazardous sites;
- Using BLM personnel to investigate illegal dumping and enforce existing regulations;
- Educating the public through literature and BLM personnel with public contact about potential hazards and safe behavior on public lands;
- Safeguarding human health, preventing environmental damage, and limiting BLM liability from hazards by authorization actions on public lands; and
- Constraining or restricting, through law enforcement, regulations, and institutional controls, the activities of the public on public lands to ensure safety.

Effects from Sustainable Development Management

Effects Common to All Alternatives

No actions for sustainable development management would affect public health and safety.

Cumulative Effects

The effects of past actions and natural events that have affected public safety generally stem from activities in the WDO planning area that have improved access, such as land tenure actions, and have caused ground disturbances, such as timber, grazing, mineral, and recreation activities.

Any foreseeable future activities that could have an effect on public safety would be mitigated by management actions that specify remediation. This could include surface use restrictions, such as closures, mineral withdrawals, no surface occupancy, and seasonal restrictions. Protective buffers, special designations, and avoidance areas could also help mitigate cumulative effects on public

safety. Activities that lead to cumulative public safety effects in the WDO would be interrelated; increased access would lead to greater likelihood of exposure to chemical and physical hazards that may be present and to increased ground disturbance. Where there is increased public exposure to health and safety risks at abandoned mine lands and other hazards, the BLM would increase the priority to remediate those hazards. Where remediation cannot remove the hazards, increased ground disturbance could destabilize abandoned mine lands or other hazardous sites, diminishing public safety.

Domestic livestock have grazed and will continue to graze most of the WDO planning area, including BLM-administered lands, except under Alternative C, Option 2. Livestock grazing increases access, causes ground disturbance, and reduces foliage, thereby impinging on some hazard sites.

Intense exploration and associated claim staking has occurred since 1982 in response to the discovery of large gold deposits. New development of mineral resources within existing claims and outside of current permitted mine boundaries at idle and active mine sites is possible as new ore deposits and extensions of existing ones are discovered. The development of these ore deposits will be influenced largely by the price of minerals in the marketplace and technological advances that lower the price to mine and process ore. There may be renewed interest in hard-rock mining for gold in the foreseeable future if gold prices increase. Oversight of future gold mining activity is required to reduce effects on water quality and public safety.

Development of various salable materials in the WDO planning area is expected to continue to expand in response to urban growth in Nevada. These materials include sand, gravel, and aggregate, dimension stone, and limestone. Development of salable mineral sites can impact public safety through increasing access, ground-disturbing activity, fugitive dust, and creation of physical hazards. Runoff from mineral sites could cause sedimentation of nearby stream features and could affect the reproduction of aquatic species. Petroleum products would be required to run mineral extraction equipment, and hazardous substances could be used to service this equipment. The increased presence of heavy trucks on secondary roads in the WDO required to transport salable minerals could also be a public safety issue.

Although there has been considerable exploration drilling (47 wells) for oil and gas within the WDO, there are no producing oil or gas wells (BLM 2006a). The planning area has abundant geothermal resources, including thermal springs, where warm or hot water comes to the surface naturally, and thermal wells, which must be drilled, developed, and sometimes pumped. And while solid leasable minerals are present within the planning area, no significant production of these minerals is underway or anticipated. Future prospecting for these resources could impact public safety by improving access and creating ground disturbance.

The continuing increase in Nevada's population and the region affects public safety in the following ways:

- Increasing the number of people that would visit BLM-administered lands and encounter the chemical and physical hazards that are present;

- Increasing public exposure to health and safety risks at abandoned mine lands would change the assigned remediation priorities for known abandoned mine lands sites to provide for greater public safety;
- Increasing the number of people that can cause ground disturbance, either by foot travel or vehicular traffic; and
- Increasing the number of people that may engage in illicit disposal activities.

Increased recreation use increases the likelihood that abandoned mine lands sites and other hazardous sites could be encountered by motorized off-road vehicle users, mountain bikers, hikers, hunters, and other recreationists. Public exposure to hazards would require reevaluation of known hazardous sites and appropriate remedial action. Recreation has increased and use patterns and motorized technology have changed. Recreational activities would continue to contribute to soil effects from foot traffic and off-road vehicles. An increase in the use of developed recreation sites and campgrounds is likely as the population increases, which could lead to an increase in illicit dumping and could increase releases of petroleum products and hazardous materials.

Noxious weed invasion is increasing and will continue, potentially increasing treatment efforts. Noxious weed treatment efforts could impact public safety if abandoned mine lands and hazardous materials sites, which may lack good vegetative cover, are treated. Use of chemical treatments, such as herbicides, to control noxious weeds also raises human and environmental health issues.

Hazardous fuels reduction, WUI projects, and activities that develop defensible space in support of the Federal Wildland Fire Management policy would protect the public from wildfire. However, such activities could cause ground disturbance and erosion around abandoned mine lands and other hazard sites that could lead to site instability where hazardous sites in the treatment area are not identified. Fuels treatments, including prescribed fire and mechanical treatment methods and allowing fire for resource benefit, is expected to increase.

The Winnemucca RMP Alternatives B, C, and D could contribute to protecting public health and safety by further outlining assessment, mitigation, and corrective protocols for abandoned mine lands, hazardous material, and other hazard sites, which may be limited under some objectives of Alternative A. The specification of these protocols would generally protect public safety across alternatives by providing specific future management for these items. However, proposed management actions for some resource areas, such as recreation, transportation, and travel management, would be less protective of public safety across alternatives without reprioritizing hazardous sites and application of appropriate remediation at the sites.

4.5.3 Social and Economic Conditions and Environmental Justice

Summary

Alternative A would maintain current management practices; therefore, it would not induce any changes to the socioeconomic indicators shown on Table 4-55, below; however, if circumstances or context changed and management actions did not respond to these change, maintaining the current management practices under Alternative A could impact socioeconomic conditions and environmental justice. The actions proposed under Alternative B are more use oriented and call for the fewest surface occupancy restrictions, special stipulations, and exclusion areas to protect water

resources, wildlife and wildlife habitat, and geological, paleontological, and cultural resources, leaving more resources and areas available for economic uses. As such, Alternative B provides the highest level of opportunity for economic development based on market goods, such as extractive industries, while potentially reducing non-market values, such as aesthetics and opportunities for solitude. Alternative C is more environmentally oriented, with the greatest acreage of restrictions; therefore, Alternative C has the greatest potential for limiting market-based economic activities that rely on resource uses but possibly enhancing non-market values, including bequest values for undisturbed lands. The acreage restrictions under Alternative D fall between Alternatives B and C. Actions designed to protect sensitive resources under all alternatives could result in increased expenditures to comply with resource restrictions as a result of the management of some resources, such as water.

Each of the action alternatives has the potential to affect local expenditures for equipment, supplies, and services by generating income in the local economy and fostering growth, by minimizing the potential for changes in economic growth, or by reducing income in the local economy and limiting growth, depending on the resource being considered. In general, Alternative B has the greatest potential for generating economic growth or minimizing effects on economic growth. Alternative C has the most actions that would limit resource uses, thereby limiting the contribution of these uses to the local economy. In particular, Option 2 would eliminate grazing, which would impact individual ranchers, reduce local economies, and affect the social values of the local area. Alternative D would tend to have an economic effect that is intermediate between Alternatives B and C due to management actions relating to grazing, minerals, and recreation.

None of the alternatives would result in direct changes in population or changes in the demand for housing, schools, and public facilities and services. No low-income or minority populations would be displaced or separated from community facilities, but management actions that restrict tribal uses of BLM lands or increased activities (such as mining) that could be a public health issue with respect to these uses could represent an environmental justice impact. Similarly, restricting grazing opportunities on BLM lands to low-income or minority ranchers for whom the use of these lands is a primary or sole source of income could disproportionately affect environmental justice populations.

Table 4-55
Summary of Effects on Socioeconomics and Environmental Justice—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Employment	No net change	Net increase	Potential net decrease under Option 2	Potential net increase
Income	No net change	Net increase	Potential net decrease under Option 2	Potential net increase
Demand for Housing	No net change	Potential indirect net increase	No net change	Potential indirect net increase
Government Services	No net change	Potential indirect net increase	Potential net decrease under Option 2	Potential indirect net increase
Environmental Justice	No net change	No change anticipated	Potential effect on low-income populations under Option 2	No net change
Non-Market Values	No net change	Potential net decrease	Potential net increase	No net change to potential net increase

Methods of Analysis

Methods and Assumptions

Impact analyses and conclusions are based on the existing and projected population, employment, income, housing, earnings, social values, economic contribution of public lands, as described in the Final Winnemucca Socioeconomic Report and in Chapter 3 of this document. Low-income and minority populations also are considered. Changes in these indicators could result from management of other resources, particularly those that form the important industry sectors that rely on public lands resources in the WDO. As identified in Chapter 3, these important economic sectors are recreation, mining, and agriculture; the forestry and timber sectors have a minimal economic presence in the WDO. Therefore, management actions that directly or indirectly affect uses on public lands could have socioeconomic impacts. In addition, renewable energy and sustainable development management could have socioeconomic effects.

Assumptions include the following:

- Restrictions in land available or implementing SOPs, BMPs, or mitigation measures in order to protect other resources could indirectly affect socioeconomics by increasing costs or precluding development;
- Decisions made with regard to transportation and access could result in increased or decreased motorized or nonmotorized backcountry opportunities, which also could impact revenues created directly or indirectly for individuals seeking those types of recreation opportunities; an increase in access would increase economic activity associated with motorized uses; and OHV restrictions would slightly decrease this type of economic activity;
- Increased population growth and relocation would increase economic activity and improve local economies;
- Changing ownership from public lands to private lands (land tenure adjustments) would expand state and local tax bases and encourage development, which would improve the local economies;
- Closing areas for certain uses could negatively impact local economies; and
- Restrictions and closures specifically to protect threatened or endangered species could reduce economic activities in the closed areas or could increase operational expenses.

Effects are quantified where possible, but potential socioeconomic impacts were not modeled. Where dollar values were unavailable for economic effects, the degree of impact was based on the number of AUMs (for grazing) or acreage potentially affected. In the absence of quantitative data, impacts were described using ranges of potential impacts or in qualitative terms, as appropriate.

Effects from Air Quality Management

Effects Common to All Alternatives

Dust control measures could increase operations costs for mining and renewable energy activities under all alternatives. However, dust minimization would provide a non-market asset to visitors by providing clean air, which in conjunction with other benefits could help ensure continued visitation

in the WDO and continued visitor expenditures in the local economy. In addition, dust and air pollution were identified as a particular tribal concern, principally with respect to minerals activities; and dust control measures would, in part, address the concerns of this environmental justice population.

Individual Effects under Alternative A

Ensuring that commercial operators (such as mineral extraction industries) on public lands implement dust abatement and other mitigation measures would increase operational costs, which could reduce expenditures for supplies and services within local communities.

Individual Effects under Alternative B

Effects are the same as under Alternative A.

Individual Effects under Alternative C

Effects are the same as under Alternative A.

Individual Effects under Alternative D

Effects are the same as under Alternative A.

Effects from Geology Management

Effects Common to All Alternatives

There are no effects common to all alternatives from geologic resources management.

Individual Effects under Alternative A

Mineral disposal would be allowed in areas containing unique geologic resources. This could benefit the local economy through the continued employment and local expenditures provided by mining operations.

Individual Effects under Alternative B

Limiting OHV travel to existing routes to protect unique geological features could have effects on socioeconomic resources. Mineral disposal would be restricted due to access limitations, if no existing roads and trails are located in areas containing salable minerals near unique geologic resources. Restrictions to mineral disposal activities could reduce revenues from these operations, which could result in lower employment in the industry in the WDO and could reduce expenditures for supplies and services within local communities by the affected operations. However, preserving unique geologic features would ensure their continued presence for the enjoyment of current and future visitors, which would be a non-market benefit to society that could be a value similar to or greater than the reduction in market activity that could occur.

Individual Effects under Alternative C

Areas containing unique geologic resources would be closed to discretionary actions that would impact geologic features, including mineral disposal. Access to these areas would also be closed.

These closures could increase costs to mining operations and decrease revenues associated with minerals in areas containing unique geologic resources. The associated employment and local expenditures also could be reduced as a result. Alternative C would offer greater protection to these features than would Alternatives A and B, and preservation of these features would represent a non-market value to society, as described under Alternative B.

Individual Effects under Alternative D

Under Alternative D, the effects on socioeconomic resources and environmental justice populations would be similar to those described under Alternative B. However, the additional designation of unique geologic resource exclusion zones would result in further closures to mineral disposal. Alternative D would offer greater protection to these features than would Alternatives A and B, and preservation of these features would represent a non-market value to society, as described under Alternative B.

Effects from Soil Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from soil resources management.

Individual Effects under Alternative A

Reducing erosion would improve rangeland health and promote stable livestock operations. Minerals and energy development would experience increased operational costs.

Individual Effects under Alternative B

Alternative B is similar to Alternative A. Fewer restrictions would improve efficiencies for livestock operations and mineral and energy development. Tax revenues from livestock sales, jobs, and revenues from the purchase of goods and services associated with livestock operations and mineral and energy development would benefit local communities.

Individual Effects under Alternative C

Implementation of BMPs, mitigation measures, required reclamation, and seasonal restrictions to protect soil resources and salvage topsoil would increase operational expenses for energy and mineral development operations and would limit returns to local economies.

Individual Effects under Alternative D

The effects from soil resources management under Alternative D are similar to those identified under Alternative C, except that fewer seasonal closures are likely to occur and ranching and recreational activities would not be affected as much as if seasonal closures were mandatory.

Effects from Water Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from water resources management.

Individual Effects under Alternative A

Water resources management under Alternative A would not change the social, demographic, and economic trends described in the Winnemucca RMP Socioeconomic Report because no provisions are made with respect to the management of priority watersheds, wellhead protection zones, or water importation and exportation. Developing water sources on public land could promote economic growth for a number of uses. Using land acquisitions and other realty actions to acquire water resources would ensure water is available for recreation and other uses and would continue the economic benefits to the communities provided by these uses.

Individual Effects under Alternative B

Managing wellhead protection zones to protect public drinking water and managing municipal watersheds as recharge areas would allow for population and development growth in communities that depend on water rights and water supplies. Managing priority watersheds for multiple uses and managing wellhead protection zones as avoidance areas could allow continued use of these areas for grazing, recreation, and minerals development. This would result in continued revenue to local communities, jobs, and tax revenues associated with ranching. It also would provide local expenditures by recreational visitors and employment and expenditures associated with mining operations. These effects would be realized only to the extent that these multiple uses occur in priority watersheds and wellhead protection zones. Alternative B also would foster economic growth and development, which would benefit employment and incomes in the WDO and areas outside of WDO by allowing water importation and exportation projects.

Individual Effects under Alternative C

Managing wellhead protection zones and priority watersheds as exclusion areas for discretionary actions could limit the use of these areas for grazing, recreation, and mineral disposal, depending on the demand for such uses in these areas. These restrictions could result in diminished revenue to local communities, jobs, and tax revenues associated with ranching; local expenditures by recreational visitors; and employment and expenditures associated with mining, contingent on the extent of the resources that would be affected. The potential economic growth and development that could result from allowing water importation and exportation projects under Alternative C would be limited by sustaining perennial yield.

Individual Effects under Alternative D

The effects under Alternative D are similar to those under Alternative B. These specific effects include managing priority watersheds. Some use limitations could increase costs to commercial operations or in some cases preclude development if development conflicts with the priorities in which the watersheds were created. Effects from managing wellhead protection zones under Alternative D are the same as under Alternative B in terms of revenue to local communities, jobs, tax revenues from ranching and recreational visitors, employment, and mining.

Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

None of the alternatives would have measurable socioeconomic impacts on employment or income because the amount of forest land within the WDO, and the associated economic activity, is relatively small. However, there are potential incremental differences among alternatives, which are described below for each alternative.

Individual Effects under Alternative A

As described under Effects Common to All Alternatives, none of the alternatives would have measurable socioeconomic impacts on employment or income, but there are potential incremental differences among alternatives, which could have a localized effect. Alternative A does not allow for commercial harvest of woodland products. Minimal socioeconomic impacts are expected due to the small area where woodland products would be available.

Individual Effects under Alternative B

Alternative B allows for commercial harvest of wood products. This alternative would have the greatest acreage available for both commercial and noncommercial harvest, including tribal collection of pinyon and juniper products; therefore, it would provide the greatest social benefit for minority populations (Indian tribes and those low-income populations that would require firewood) and the greatest potential for economic benefit with respect to commercial revenues and the associated economic multiplier effects.

Individual Effects under Alternative C

Alternative C would prohibit both commercial and noncommercial harvest of woodland products. This alternative would provide the least acreage for both commercial and noncommercial harvest, including tribal collection of pinyon and juniper products; therefore, the two options would offer the lowest social benefit for minority populations (Indian tribes and those low-income populations that require firewood) and the lowest benefit with respect to commercial revenues and the associated economic multiplier effects.

Individual Effects under Alternative D

Alternative D would allow commercial harvesting to achieve resource objectives and on a case-by-case basis, with prohibitions in some areas. Alternative D, therefore, would provide an intermediate level of social and economic benefit for minority populations and an intermediate benefit to commercial revenues and the associated economic multiplier effects. Allowing the short-term harvest of woodland products throughout the WDO would meet short-term public wood needs and would provide the economic benefits described above.

Effects from Vegetation—Weeds Management

Effects Common to All Alternatives

Under all alternatives, weeds management would be unlikely to have a measurable effect on environmental justice populations or socioeconomic resources. Weeds management under all

alternatives would be likely to improve rangeland, which also could improve the health of the animals that graze it. Improved livestock health could reduce costs to ranchers for maintaining livestock and could increase their sale price. Weed management would increase operational costs for commercial users to control weeds. These costs could reduce the amount of goods and services purchased, but they should have minimal impacts on the local economies.

Individual Effects under Alternative A

Controlling weeds would improve the health of the land, which would provide long-term stability for ranching operations. Commercial operators, including those engaging in mineral and energy development and realty actions, could experience increased operational costs to treat weeds. As a result, revenues associated with these operations could decline as they adjust to increased costs, and local economies may experience minimal declines in goods or services purchased by these commercial operations.

Individual Effects under Alternative B

The effects of Alternative B are similar to those described under Alternative A.

Individual Effects under Alternative C

Alternative C would not allow chemical integrated weed treatments. Cost to commercial operators would increase, as they would have to use other treatment methods, such as mechanical treatments, to control weeds. The socioeconomic effects of these increased costs would be the same as those described under Alternative A. Biological control could provide long-term land health benefits, with fewer environmental (and perceived public health) side effects, compared to chemical use, which would benefit the ranching industry, which depends on land health. Improved land health could reduce costs to ranchers by reducing the amount of land needed to meet forage needs and could benefit the economy of ranching-dependent communities.

Individual Effects under Alternative D

The effects of Alternative D are similar to those described under Alternative A.

Effects from Chemical and Biological Control

Effects Common to All Alternatives

Under all alternatives, chemical and biological control would likely increase operational costs but would have minimal indirect effects on environmental justice populations and socioeconomic resources. Economic activities that occur within the WDO, including access to traditional sites, recreation, grazing, mining, and renewable energy resource development, would not be altered by chemical and biological control.

Individual Effects under Alternative A

The socioeconomic effects of chemical and biological control are the same as those identified under Alternative A for weeds management.

Individual Effects under Alternative B

Alternative B emphasizes cost and treatment effectiveness, ultimately reducing operational costs. As a result there would be more disposable income available to be spent in local communities.

Individual Effects under Alternative C

The socioeconomic effects of chemical and biological control are the same as those identified under Alternative C for weeds management.

Individual Effects under Alternative D

The effects of Alternative D are similar to those described under Alternative A.

Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

All alternatives provide for grazing on rangeland, except for Option 2 under Alternative C. The continued availability of rangeland for grazing would maintain ranchers' contribution to the local economy through expenditures on equipment, supplies, and services and employment. In addition, continued grazing would maintain the social welfare of the rural population of the WDO by preserving a unique way of life. Implementing mitigation measures and emergency stabilization and rehabilitation treatments may temporarily close areas to certain uses, such as livestock grazing and recreation, which would have short-term economic impact.

Individual Effects under Alternative A

Resting burned areas of rangeland vegetation from grazing for two growing seasons could result in higher costs to ranchers and a subsequent reduction in income for permittees, to the extent that these reductions would require permittees to lease additional private land, to purchase additional forage, or to reduce livestock numbers over the long term. These impacts on ranchers could affect local communities dependent on ranching operations in terms of tax revenue from livestock sales, jobs, and the purchase of supplies. The resultant loss in livestock grazing fees would mean lower returns to the affected counties from livestock grazing. These effects would be short term until burned areas were open again to grazing. Restoring crested wheatgrass seedings would provide a consistent forage base for livestock, helping to stabilize livestock operations and economic benefits to the community.

Individual Effects under Alternative B

Under Alternative B, the effects of resting burned areas of rangeland vegetation from grazing for two growing seasons are the same as described under Alternative A. Under Alternative B, more livestock grazing flexibility would be afforded by using an adaptive management process. This process would encourage development of specific plans to allow flexibility in grazing operations. Other actions, such as prescribed grazing and restoring wheatgrass seedings, would improve the forage base. This alternative would improve grazing operations and would provide consequent economic benefits to local communities.

Individual Effects under Alternative C

Under Alternative C, Option 1, the effects of resting burned areas of rangeland vegetation from grazing for five growing seasons are likely to be greatest on ranching with respect to a reduction in income for permittees. It would be more likely that these reductions would require permittees in burned areas to lease additional private land, purchase additional forage, or reduce livestock numbers over the longer resting period. Alternative C, Option 1, would result in the greatest loss in grazing fees and returns to local governments. Option 2 would eliminate grazing on public lands, leading to potentially large economic losses to individual ranchers. See the Effects from Livestock Grazing under Alternative C for further socioeconomic analysis.

Individual Effects under Alternative D

Alternative D provides a more flexible timeframe for resting burned areas of rangeland vegetation from grazing. Other impacts are similar to those described under Alternative A.

Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Ensuring the continued health of wetland and riparian areas would continue to provide a non-market benefit for visitors to the WDO by continuing to make habitat available for biological diversity and consequent wildlife watching. Habitat that supports diverse wildlife could draw visitors and visitor expenditures to the WDO and could secure the existence of a valued resource for the future. Wetlands can provide direct use benefits if such products as nuts and berries can be produced from them. In addition they provide such non-market values as nutrient retention, water filtration, flood control, and erosion protection.

Individual Effects under Alternative A

Mitigating adverse impacts on wetland riparian areas could increase operational costs for ranchers and mineral and energy development. The costs of realty actions also could increase, and certain recreational uses could be precluded. These effects would vary based on the nature and degree of the mitigation.

Individual Effects under Alternative B

Alternative B offers more flexibility for uses within riparian wetland areas, as PFC thresholds are lower, which would allow more uses and associated disturbance in these areas. Achieving PFC upward to 60 percent could increase operational costs and restrict uses if PFC objectives are not met. The local economy and social values could be affected if a reduction in the area or type of recreation resulted in a decrease in visitors or a decrease in a locally valued recreation type (such as OHV use). If these road closures and route relocations inhibited access to minerals and mining operations, costs to these operations could increase. These costs could be passed along to the local economy in terms of decreased employment or income.

Individual Effects under Alternative C

Alternative C would impose more limitations on economic activities than Alternative B. The two options would be more likely to affect ranching costs, recreation, and mining as a result of higher PFC objectives. Achieving PFC upward to 85 percent could increase operational costs and restrict uses if PFC objectives are not met. This could result in diminished revenue to local communities and tax revenues associated with these operations. However, Alternative C would provide greater protection to riparian and wetlands areas, the preservation of which would benefit society, as described above under Effects from Vegetation-Riparian and Wetlands Management, Effects Common to All Alternatives.

Individual Effects under Alternative D

Alternative D balances limitations between Alternatives B and C. Some limitations on economic activities and would be the most likely to affect ranching costs, recreation, and mining.

Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Protecting fish and wildlife would involve use restrictions and implementation of mitigation measures and SOPs under all alternatives, which could affect the economic contribution of grazing, minerals operations, recreation, or renewable energy development, depending on the alternative, the types of restrictions, and the extent of the restrictions. The protection of fish habitat could improve fisheries for recreational use, which can bring visitor expenditures into the local economy, and, similarly, improving wildlife habitat can improve wildlife watching and hunting, both of which can inject tourist dollars into the local economy. Fish and wildlife habitat protection can provide increased biodiversity, which can have non-market socioeconomic values. These non-market values include existence values to current generations and option and bequest benefits to future generations. Existence value reflects benefits from knowing that a diversity of wildlife and flora exist; while, the potential benefits from this biodiversity to be available in the future would be an option value. The bequest value derives from ensuring that a diversity of wildlife and flora would be preserved for future generations. Nationally 71,132,000 people engaged in wildlife watching in 2006, generating 1,063,482 jobs and over $40 billion in income (US Fish and Wildlife Service 2006b). Wildlife watching in Nevada is valued at an average of $44 per day per in-state visitor and $85 per day per out-of-state visitor, based on a contingent valuation survey (US Fish and Wildlife Service 2006a).

Individual Effects under Alternative A

Use restrictions under Alternative A to protect nesting migratory birds and management to protect wildlife habitat could affect ranching, mining, and recreational uses by limiting when and where these activities could occur. Therefore, this alternative could affect the economy by potentially reducing local expenditures, employment, and income. Defining stream bank alteration restrictions in implementation plans could limit use, while benefiting the economy by improving fisheries. Managing wildlife habitat to provide big game populations would foster continued economic growth from recreation and hunting.

Individual Effects under Alternative B

Of the action alternatives, Alternative B would have the lowest potential to adversely affect the economic and social uses within the WDO and the highest potential to stimulate the economy through the identified management actions. Alternative B possibly would not require as many operational restrictions or mitigation measures to protect wildlife habitat. Alternative B would foster ranching by prohibiting pioneering elk populations. This measure would remove elk hunting opportunities, which could also reduce the economic contribution associated with hunting. Allowing artificial water sources also would benefit wildlife and could improve hunting and wildlife watching. Hunting generated about 24.3 percent of total direct expenditures within the WDO between October 2003 and September 2004 (BLM 2006c).

Individual Effects under Alternative C

Of the action alternatives, Alternative C has the greatest potential to affect the economic and social uses within the WDO and the lowest potential to stimulate the economy through the identified management actions. The two options would require restrictions on surface disturbance to protect wildlife habitat. Accepting colonization by pioneering elk and prohibiting artificial water sources under Alternative C could affect the productivity of ranching operations; however, allowing elk colonization would provide socioeconomic benefits by providing new hunting opportunities. Removing access routes that are adversely impacting aquatic resources could affect grazing and recreation use by decreasing accessibility and the number of routes available for recreation, such as OHV use.

Individual Effects under Alternative D

The potential for socioeconomic effects as a result of Alternative D is intermediate between those described under Alternatives B and C. Alternative D designates an intermediate acreage for use restrictions to protect wildlife and wildlife habitat, while allowing for multiple uses where conditions are appropriate.

Effects from Special Status Species Management

Effects Common to All Alternatives

All alternatives would impose restrictions to protect special status species that could inhibit ranching, mining, recreation, and renewable energy development activities. These restrictions could increase the costs of operations, decrease the incomes of operators, discourage some recreational activities, and decrease expenditures within the local economy. Avoiding the listing of species as threatened and endangered by implementing management actions designed to prevent listing would impose fewer restrictions on ranching, mining, recreation, and renewable energy activities, which otherwise could be curtailed to protect threatened and endangered species. Protecting threatened and endangered species also could increase operational costs for these uses. Therefore, avoiding listing would allow for the continued economic contribution of these activities without the associated costs of additional protection measures. However, protecting special status species would benefit biodiversity, which would provide non-market benefits in the form of existence value to current generations and option and bequest benefits to future generations.

Individual Effects under Alternative A

Use and surface disturbance restrictions to protect sensitive species would place limitations on mining, realty transactions, recreation, and energy development. The restrictions could affect the local economy to the extent that they would increase the operational costs of mining, realty transactions, and energy development or decrease the number of visitors. These increased costs could result in reduced earnings and decreased expenditures within the overall economy, affecting economic growth, income, and employment. The effects of implementing management actions that would avoid listing species as threatened and endangered are the same as those described under Effects Common to All Alternatives.

A decrease in the number of visitors due to access restrictions or limitations on the types of recreation activities available could affect the local economy by decreasing local expenditures on lodging, dining, recreational equipment and repairs, and supplies, which could affect incomes and employment in these sectors. Similarly, if ROW restrictions were to discourage energy development, the potential for economic growth based on this industry also could be limited, depending on whether the restrictions would occur in areas of high potential.

Individual Effects under Alternative B

Under Alternative B, the economic impacts are similar to those described under alternative A. The increased flexibility in the application of use and surface disturbance restrictions to protect sensitive species would decrease the degree of market effect on the economy.

Individual Effects under Alternative C

Under Alternative C, the decreased flexibility in the application of use and surface disturbance restrictions to protect sensitive species as compared with current conditions could increase the likelihood that these restrictions would increase operational costs, as compared to Alternatives A and B. Not authorizing high profile structures within two miles of active leks could prohibit development of energy projects within certain areas, increasing costs and resulting in more economic impacts, as compared to Alternatives A and B.

Individual Effects under Alternative D

Similar to Alternative A, Alternative D provides flexibility in the application of use and surface disturbance restrictions to protect sensitive species.

Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

All alternatives would support the management of wild horses and burros on WDO lands and would preserve this social value.

Potential economic effects could occur to the extent that management of wild horses and burros would affect grazing lands and ranching operations. Implementing mitigation measures may increase expenditures in order to protect wild horses and burros.

Individual Effects under Alternative A

Gathering WHB to low AML and managing WHB within the AML range should improve rangeland health and therefore potentially stabilize the livestock forage base for ranchers. This would result in lower maintenance costs to ranchers and potentially higher sales prices for livestock and the associated economic benefits. Implementing mitigation measures to protect wild horses and burros may increase operational costs for mineral and energy development. These costs should have minimal impacts on the local economy.

Individual Effects under Alternative B

Alternative B would increase wild horse and burro management to accommodate multiple uses. Operational costs would be lower and the quality of grazing land could improve. Improved land health would improve livestock health and potentially lower maintenance costs and result in higher livestock sales prices for ranchers. Operational costs to other public land users would be lower, compared to other alternatives.

Individual Effects under Alternative C

Precluding special recreation permits in HMAs if they cause adverse impacts on WHB would limit recreation uses and the economic benefits they provide for OHV racing and outfitter and guide services. Stressing unobstructed landscapes to ensure the free-roaming nature of WHB may increase costs to livestock operators to manage livestock. Wild horse populations may increase faster over time without fertility control, which may reduce the amount of forage available to livestock and impair rangeland health until gathers are implemented.

Individual Effects under Alternative D

The socioeconomic effects of WHB management under Alternative D are similar to those described under Alternative A. Gathering WHB to low AML would protect forage availability and economic stability for livestock operators.

Effects from Wildland Fire Management

Effects Common to All Alternatives

Fire restriction could pose seasonal limitations for some uses, such as recreation. Hazardous fuels reductions could protect infrastructure from wildfire, ensuring continued employment and other economic benefits. Emergency stabilization and rehabilitation treatments would temporarily close areas for certain uses. However, restoring rangeland would improve health of the land, providing long-term economic benefits for ranching and wildlife habitat for hunting. Implementing wildland fire protection plans would protect the economic base of communities.

Individual Effects under Alternative A

Implementing fuel treatments would provide economic benefits by protecting mineral development and energy infrastructure from wildland fire. The economic benefits include reduced potential for business interruption from wildland fires. Fuel treatments also would protect rangelands by reducing the spread and intensity of wildfire. This would help ensure a stable forage base for livestock

operations. Rehabilitation of rangeland after a fire would reestablish a forage base for livestock operations, offering long-term stability to the livestock operations. Short-term closures of areas undergoing rehabilitation would increase operational costs to ranchers for finding alternative feed or forage. Short-term closures may limit OHV use in areas under rehabilitation. This may cause short-term and minimal economic impacts on local communities.

Individual Effects under Alternative B

Economic impacts are similar to those described for Alternative A. Allowing fire for resource benefit (110,167 acres) may improve rangeland health in areas, which would be an economic benefit and offer long-term stability to ranchers.

Individual Effects under Alternative C

The effects from wildland fire management under Alternative C are the same as those identified under Alternative A.

Individual Effects under Alternative D

The effects from wildland fire management under Alternative D would be the same as those identified under Alternative A. Allowing fire for resource benefit (9,932 acres) may improve rangeland health in areas, which would contribute economic benefits and stability to ranchers. These benefits would be less than those described under Alternative B because the area available for allowing fire for resource benefit would be smaller.

Effects from Cultural Resources Management

Effects Common to All Alternatives

There are no effects common to all alternatives from cultural resources management.

Individual Effects under Alternative A

Under current conditions, changes to OHV travel management would remain the same with few restrictions on OHV use. Recreation use based on OHVs would continue to grow and contribute economic benefits to local communities through the purchases of fuel and other goods and services. However, OHV travel could disturb cultural resources, which may have had greater value to visitors who prefer more primitive forms of recreation, educational opportunities, or preservation of the area's ties with the past. Mineral and energy development and commercial recreation events would incur an increase in operational costs to avoid or reduce adverse impacts on cultural resources. These impacts include costs to inventory, evaluate, and implement mitigation measures to reduce adverse impact on cultural resources. Increased operational costs would reduce some economic benefits to the community.

Individual Effects under Alternative B

The socioeconomic effects of cultural resources management under Alternative B are similar to those described under Alternative A.

Individual Effects under Alternative C

Under Alternative C, limiting OHV travel to protect culturally sensitive sites or historic trails and closing Class I segments of National Historic Trails could discourage some OHV users but could encourage use by visitors who appreciate more primitive forms of recreation. This has the potential for decreased local expenditures by OHV users and hunters but increased expenditures by other user groups. Minerals, energy, and realty actions would experience increased operational costs in areas of historic trails in order to comply with VRM class II objectives. These costs may include changing locations or painting structures to blend with the setting. These costs would have minimal socioeconomic impacts on local communities.

Prohibiting fluid and solid minerals surface occupancy and mineral material sales to protect historic trails could limit economic development based on mineral operations, increase operations costs, and reduce expenditures, income, and employment.

Individual Effects under Alternative D

The effects from cultural resources management under Alternative D are the same as those described under Alternative C. However, OHV travel management restrictions would include more areas open to OHV use, which would promote economic benefits to local communities associated with OHV use.

Effects from Tribal Consultation

Effects Common to All Alternatives

Tribal consultation may increase operational costs for mineral and energy development and realty transactions and could limit recreation uses or increase the costs of commercial recreation activities by avoiding sensitive areas of Native American religious importance. These costs would vary based on the scope and degree of mitigating adverse impacts. However, tribal consultation also could prevent impacts, such as access restrictions, health effects, noise, and physical disturbance of traditional sites, to this environmental justice population.

Effects from Paleontological Resources Management

Effects Common to All Alternatives

All alternatives would impose some level of public access restriction that could affect such economic activities as recreation, grazing, and minerals development for the protection of paleontological resources. These restrictions also would ensure that the potential for losses of this resource would be minimized. The preservation of paleontological resources would have non-market values similar to those described under Effects from Geology Management, Individual Effects under Alternative B.

Individual Effects under Alternative A

Alternative A would restrict discretionary realty and recreation actions from disturbing or destroying scientifically important paleontological resources. This would increase operational costs for actions

related to mineral disposal, recreation, and realty and could limit the scope of recreation activities. These costs would have minimal socioeconomic impacts on local communities.

Individual Effects under Alternative B

The socioeconomic effects from paleontological resources management under alternative B are similar to those identified under Alternative A.

Individual Effects under Alternative C

Under Alternative C, no activities would be authorized if they would disturb, alter, or destroy important paleontological sites. Socioeconomic impacts would vary based on the size of proposed projects. Impacts could include reduced expenditures within the local economy, which could indirectly affect overall income and employment. Alternative C would provide the greatest level of protection of this resource and the greatest protection of its associated non-market value as a draw to visitors, an educational tool, and a heritage asset.

Individual Effects under Alternative D

The socioeconomic effects from paleontological resources management under Alternative D are the same as those described under Alternative A.

Effects from Visual Resources Management

Effects Common to All Alternatives

Commercial operations would experience increased costs to comply with VRM management objectives under all alternatives. These increased costs would be associated with such activities as moving, shaping, or painting facilities to blend with the surrounding viewshed. Operational costs would increase based on the designated VRM class in which the commercial operations would occur. VRM management would preserve valued viewsheds that draw recreational visitors, who also generate expenditures, income, and employment in the local economy.

Individual Effects under Alternative A

Under Alternative A, costs to commercial operations would be relatively low and would have minimal socioeconomic impacts on local communities.

Individual Effects under Alternative B

Operational costs under Alternative B would be greater than under Alternative A, as more lands would be designated as VRM Class 2 and 3.

Individual Effects under Alternative C

Operational costs under Alternative C would be greater than under Alternative A, as more lands would be designated as VRM Class 2 and 3. More land would be designated as VRM Class 2 than under Alternatives A and B, which would have more restrictions and would incur higher costs of operation in these areas. However, Alternative C would preserve views over a greater area, which

could be more valuable to the public, including both the local population and visitors to the WDO, than the negative effects of increased commercial operations costs.

Individual Effects under Alternative D

The socioeconomic effects from visual resources management under Alternative D would fall between those identified under Alternatives B and C, based on the VRM classification under Alternative D.

Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

Implementing mitigation measures to protect cave and karsts would vary based on site-specific situations. Avoiding caves and karsts may increase costs to mining and energy operations. Preservation of this resource would have similar non-market values to those described under Effects from Geology Management and Effects from Paleontological Resources Management.

Individual Effects under Alternative A

Under Alternative A, the costs identified under Effects Common to All Alternatives would have a minimal effect on these operations and therefore a minimal impact on the local economy.

Individual Effects under Alternative B

The effects on socioeconomic resources under Alternative B are similar to those described under Alternative A.

Individual Effects under Alternative C

Restrictions on surface-disturbing activities near cave and karsts would increase operational costs to protect these resources. Alternative C would have limited flexibility with respect to the location of surface-disturbing activities, including some types of recreation and minerals and energy resource development, because these activities would be prohibited within a 500-foot buffer around caves and karsts, causing higher costs as compared to the other alternatives. Alternative C would provide the greatest area of protection of cave and karst resources, which could also provide the maximum realization of the non-market values of this resource, depending on its importance in the ROI and to visitors in the WDO.

Individual Effects under Alternative D

Under Alternative D, restrictions would be more flexible than under Alternative C, resulting in lower operational costs and associated economic impacts, as compared to Alternative C.

Effects from Livestock Grazing Management

Effects Common to All Alternatives

Under all alternatives except Option 2 of Alternative C, livestock grazing on public lands would continue, ensuring that tax revenues from livestock sales, jobs, income, and ranching-related

expenditures in the local economy would continue and that livestock grazing receipts would be returned to the counties within the WDO (grazing receipts totaled $51,357 in 2005). All alternatives except Alternative D would designate 399,073 AUMs of livestock forage, which would allow for the same level of cattle and calf production under these alternatives. At a return rate of $0.1529 per AUM, approximately $61,019 would be returned to WDO counties under Alternatives A, B, and C. In addition, the social welfare of the rural population of the WDO would be maintained by preserving a unique way of life under all alternatives.

Individual Effects under Alternative A

Resting burned areas from livestock grazing would have short term effects by increasing operational costs for ranchers. These costs include finding alternative range to graze or buying hay to feed livestock. Increased costs would have short term impacts, depending on length of time that the closures are in effect. Economic impacts would be minimal and would include loss of tax revenue from livestock sales and a reduction in the purchase of supplies.

Allowing relinquishments of grazing permits and providing forage banks could have both positive and adverse socioeconomic effects. If AUMs in other allotments became unusable, the use of these areas by the affected permittees could offset economic losses. However, if the relinquished allotments were not in use, they would continue to require maintenance.

Allowing TNR would maximize a permittee's use of allotted AUMs, potentially benefiting ranchers' operational efficiency.

Individual Effects under Alternative B

Designating 296,008 acres as closed to livestock grazing would have little, if any, socioeconomic impacts on the livestock industry and associated communities, as these closed areas are primarily lakebed playas with little vegetation; consequently, they are not suitable for grazing.

Alternative B would have both positive and adverse socioeconomic effects by not retiring grazing permits and not providing forage banks. Livestock operations that have had public rangeland affected by fire or drought would be jeopardized by the loss forage and increased costs to find forage. This alternative would improve collaboration between the BLM and the permittees and possibly allow more flexibility to livestock operations based on adaptive management applied to the allotments. This approach could maximize the efficiency of allotment use, decreasing operational costs and increasing the socioeconomic benefits to those who participate in the process.

The effects of allowing TNR are the same as those identified under Alternative A. In addition, allowing continuous season-long grazing would maximize the amount of forage utilized, which could decrease production costs to ranchers, contributing to the local economy.

Individual Effects under Alternative C

Option 1

Although a slightly greater area would be closed to grazing than under Alternative B, the effects of acreage closures are similar to those described under Alternative B.

Under Alternative C Option 1, the effects of relinquishments of grazing permits and providing forage banks are similar to those described under Alternative A. Closing newly acquired public lands to grazing would reduce benefits to the local economy from taxes from livestock sales and the sales of supplies, as well as the revenues from the purchase of goods and services generated by ranching.

Prohibiting TNR, eliminating grazing on acquired lands, and limiting grazing to two consecutive years during the critical growing period could reduce available forage, increase ranchers' operational costs, and limit grazing operations. The increase in operational costs is expected to have a minimal impact on local economies.

Option 2

Eliminating grazing would impact individual ranchers, the local economy, and the social values of the local area, and it could result in environmental justice effects. Costs to ranchers to provide forage for cattle would increase, potentially decreasing ranchers' incomes as they would have to find other sources of forage, such as purchasing additional hay or grazing land to equal the AUMs required for the livestock currently using public lands. Eliminating grazing would have an overall negative effect on the local economy, as ranching incomes would be reduced and consequently the purchase of local services and supplies would be reduced.

Although ranchers must hold private grazing lands in order to obtain grazing permits on WDO lands, the loss of federal grazing permits could still affect their incomes and viability, depending on ranch size and the role that ranching plays as a source of income for the individual rancher. As the number of AUMs withdrawn from use increases, herd size decreases and more hay is sold. The reduction in returns from hay, as compared to livestock, causes a decline in ranch profits. Although the reliance of ranchers on forage from federal land grazing can be relatively small when calculated on an acreage or AUM basis, grazing on federal lands can be an important source of forage, based on seasonal needs. Seasonal forage availability affects the optimal use of other forages and resources when federal AUMs are not available. Potential reductions in income and net ranch returns can be greater than the direct economic loss from reductions in federal grazing. Eliminating public grazing may increase the rate of agricultural land conversion, which can increase costs to local governments to supply services and infrastructure for residential use. It has been estimated that converting 35 acres of agricultural land to residential use costs a county government $1.13 for every dollar in revenue (Foulke et al. 2006). In addition, local governments would realize a loss in the value of returns from grazing fees, which totaled $410,868 in 2005 (BLM 2006c).

A reduction in the level of ranching could affect the social value attached to this way of life, which is typically identified as "Western," and could affect communities whose identity and livelihood are associated with ranching. In addition to running a business, ranchers value ranching for the rural lifestyle it offers and the family life it provides. Eliminating ranching on BLM lands could be perceived as a threat to these values and could put these values at risk for small-scale ranchers for whom ranching is the dominant source of income. Ranch lands provide a traditional source of income, habitat for wildlife, and open spaces that are valued for wildlife watching and the preservation of naturalness. These characteristics are particularly important when population and development pressures result in the conversion of agricultural land and reduce open space. Communities can derive cultural identity and quality of life from the presence of this traditional land

use, which could be reduced if eliminating grazing on WDO lands resulted in a perceived loss of this tradition.

If increased ranching costs resulted in a loss of jobs and income to low-income or minority populations, eliminating grazing could have environmental justice implications.

Individual Effects under Alternative D

Although a greater area would be closed to grazing under Alternative D than under Alternative B, the effects of acreage closures are similar to those described under Alternative B.

The effects of allowing relinquishments of grazing permits, providing forage banks, and allowing TNR under Alternative D are similar to those described under Alternative A.

Under Alternative D, conditionally allowing grazing for more than three consecutive years could result in decreased production costs to ranchers.

Effects from Minerals Management

Effects Common to All Alternatives

General

Under all alternatives, continued use of WDO lands for mining would contribute to the local and regional economy through the purchase of goods and services in the local economy by employees and for the physical mining operation. Mining would continue to employ local and regional labor, mainly in the provision of the goods and services sectors supplying the mining operations, and would contribute to local and regional income. In addition, the continued use of WDO lands for mining would allow for the continued collection of mineral royalties, which would be returned to the state.

Reclamation would be required under all alternatives which would increase operational costs for mineral development. However, reclamation would continue short term employment at mine sites after active mining has ceased.

Closing areas to or withdrawing them from mining would directly limit the potential for economic development based on mining. Restrictions, such as seasonal use limitations and special stipulations, could increase the costs of operations, which could be reflected in a reduction in income, employment, or expenditures. If costs were to increase to the extent that mining operations would be economically prohibitive, restrictions would result in a decrease in mining operations and an associated decrease in income, employment, and local expenditures.

In particular, the unrestricted area available for salable minerals (industrial minerals) and locatable minerals (gold) operations would be important to the employment and labor income of both Humboldt and Pershing Counties. The area available for fluid minerals operations, including geothermal resources, which are the source of 36.5 percent of the returns from royalties (excluding rent and other revenues in these counties), would be of particular importance in Washoe and Churchill Counties (BLM 2006a).

Ensuring mineral development operations do not hamper existing public access would allow other uses of public lands to continue and maintain existing socio-economic benefits.

In addition to increasing the operations costs of commercial activities, closures and restrictions would protect sensitive resources that have non-market socioeconomic values. As identified in previous sections, unique geologic features, cave and karst resources, and paleontological resources represent a draw for current and future visitors and for residents who enjoy natural areas or residents who live in the area for its scenic, cultural, historic, and natural qualities. Wetlands, riparian areas, and wildlife habitat supports diverse wildlife that could bring in visitors and visitor expenditures to the WDO and secure the existence of a valued resource for the future. Improving wildlife habitat can improve wildlife watching and hunting, both of which can inject tourist dollars into the local economy. Wetlands can provide direct use benefits if such products such as nuts and berries can be produced from them. In addition they provide such non-market values as nutrient retention, water filtration, flood control, and erosion protection. Fish habitat could improve fisheries for recreation, which can bring visitor expenditures into the local economy. Both fish and wildlife habitat protection can improve biodiversity, which can provide non-market value in the form of existence value to current generations and option and bequest benefits to future generations.

RFDs

According to the reasonably foreseeable development scenario, no commercial quantities of oil and gas are anticipated from the forecast 18 wells, which would limit the employment and income that would be directly generated by an operation with long-term productivity. However, the manpower and equipment needed for exploration, drilling, and closure would be likely to use local or regional labor and would result in expenditures within the local economy, which could stimulate growth and increased income in these industries.

Individual Effects under Alternative A

General

Alternative A has the largest area open to minerals exploration and development and the smallest acreage either closed or subject to special stipulations that would restrict such operations. Therefore, Alternative A has the highest potential for economic development related to minerals development and is the most likely to provide the highest level of expenditure, employment, and income relating to minerals within the local and regional economy. However, it would be the least protective of sensitive resources, which could have equivalent or greater non-market values.

Salable

Under Alternative A, three clay, stone, and sand and gravel areas would be within closed areas, which could limit the potential for economic development based on salable minerals.

Fluid

Under Alternative A, 32,124 acres within former KGRAs or current or historical geothermal lease areas would be closed, and 1,834 acres would have no surface occupancy, which could limit the potential for economic development based on geothermal resources; these resources are particularly important to the economies of Churchill and Washoe Counties (BLM 2006a).

Solid

Under Alternative A, no industrial minerals areas would be closed, have no surface occupancy, or have seasonal restrictions. These minerals are important contributors to employment and income in Humboldt and Pershing Counties.

Locatable

Under Alternative A, 2,485 acres within areas with high gold potential (mining districts with gold resources, areas prospective and favorable for placer gold, areas favorable and prospective for sediment-hosted gold deposits) would be closed. In addition, 1,425,079 acres would have stipulations and seasonal restrictions, which could increase costs for economic development based on gold mining, which in combination with industrial minerals operations, employs 18 percent of the labor force in Humboldt County and 16 percent in Pershing County (BLM 2006a). Mineral development could restrict access to public lands for other uses based on public safety. This could restrict recreational opportunities, however the economic impacts would be minimal. Livestock operations could lose lands available to grazing due to fencing mine sites or construction of mine pits. These impacts should be minimal to livestock operations and benefits from mining would contribute substantial benefits to local communities.

Individual Effects under Alternative B

General

Of the action alternatives, Alternative B has the largest area open to minerals exploration and development and the smallest acreage either closed or subject to special stipulations that would restrict such operations. Of the action alternatives, it would have the highest potential for economic development relating to minerals development and would be most likely to provide the highest level of expenditure, employment, and income related to minerals within the local and regional economy. However, the potential for this type of development would be lower than under current conditions.

Salable

Under Alternative B, three clay, stone, and sand and gravel areas would be within closed areas.

Fluid

Under Alternative B, 39,928 acres within former KGRAs or current or historical geothermal lease areas would be closed, and 81,127 acres would have no surface occupancy.

Solid

Under Alternative B, no industrial minerals areas would be closed or would have no surface occupancy or seasonal restrictions.

Locatable

Under Alternative B, none of the mining districts with occurrences of silver and gold would be closed, and 23 of the 25 mining districts with occurrences of silver and gold would have stipulations

and seasonal restrictions. Other socioeconomic impacts would be similar to those described under Alternative A.

Individual Effects under Alternative C

General

Alternative C would have the fewest acres open or open with standard conditions to minerals development and would have the greatest area covered by special stipulations or closure to minerals development. Alternative C, therefore, would have the greatest potential to limit economic development based on mineral operations, to increase operations costs, and to reduce income, employment, and expenditures within the local economy based on this industry. It also would be likely to provide the greatest level of protection to sensitive resources and their associated values to WDO visitors and area residents.

Salable

Under Alternative C, 108 clay, stone, and sand and gravel areas would be within closed areas.

Fluid

Under Alternative C, 421,866 acres within former KGRAs or current or historical geothermal lease areas would be closed.

Solid

Under Alternative C, three industrial minerals areas would be closed.

Locatable

Under Alternative C, portions of two of the mining districts with occurrences of silver and gold would be closed, and 24 of the 25 mining districts with occurrences of silver and gold would have stipulations and seasonal restrictions.

Individual Effects under Alternative D

General

Of the action alternatives, Alternative D would have an intermediate acreage open or open with standard conditions to minerals development and would have an intermediate area covered by special stipulations or closure to minerals development. Alternative D would have an intermediate potential to limit economic development based on mineral operations, increased operations costs, and reduced income, employment, and expenditures (as compared with current conditions).

Salable

Under Alternative D, 117 clay, stone, and sand and gravel areas would be within closed areas.

Fluid

Under Alternative D, 76,465 acres within former KGRAs or current or historical geothermal lease areas would be closed, and 74,526 acres would have no surface occupancy.

Solid

Under Alternative D, no industrial minerals areas would be closed, have surface occupancy, or have seasonal restrictions.

Locatable

Under Alternative D, portions of two of the mining districts with occurrences of silver and gold would be closed, and 22 of the 25 mining districts with occurrences of silver and gold would have stipulations and seasonal restrictions. Other socioeconomic impacts would be similar to those describe under alternative A.

Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

All alternatives would provide education and public outreach, which could reinforce social values by improving visitors' connection with WDO lands. In addition, all alternatives provide for multiple types of dispersed recreation, which would allow for continued inflow of recreation- and tourism-based revenues in the local economy. Such revenues would be derived from expenditures on such goods and services as lodging, dining, recreation equipment, equipment repairs, fuel, and supplies. Differences among alternatives would result primarily from changes in the mix of uses and the acreage available for these uses. For example, OHV use restrictions could reduce expenditures in the local economies by OHV enthusiasts in the short term; however, expenditures by other user groups could increase as a result.

Individual Effects under Alternative A

Alternative A has the least acreage devoted to management as SRMAs, which would appeal to visitors to WDO lands who appreciate lower levels of management in their recreation. Alternative A would have the least acreage closed to OHV travel. Most OHV travel is managed as open under Alternative A, which would provide the greatest area of use for OHV enthusiasts. OHV enthusiasts spent about 11 percent of expenditures by recreation participants within the WDO. These expenditures generate direct and indirect income to local proprietors and residents (BLM 2006c). In addition, hunters use OHV travel to access favorite hunting areas and game, and this group contributed 24 percent of expenditures by recreation participants within the WDO (BLM 2006c).

However, the level of open OHV recreation could be limiting the amount of more primitive, nonmotorized recreation in the WDO, and this group (including such uses as backpacking, camping, fishing, environmental education, horseback riding, bicycling, hiking, picnicking, photography, rock-hounding, viewing scenery, wildlife viewing, and winter activities) contributed 47 percent of expenditures in the local economy by recreation participants within the WDO (BLM 2006c).

Identifying new reservoir sites for water-based recreation and encouraging development of sites could promote recreation use and provide increased economic benefits to local communities. Issuing large group special recreation permits also would promote beneficial economic activity, from the purchase of fuel, supplies and services within communities to support these events.

Individual Effects under Alternative B

Of the action alternatives, Alternative B has the most acreage devoted to management as SRMAs, which would appeal to visitors to WDO lands who are part of the targeted market for each SRMA. Alternative B also would have the greatest opportunity to generate economic growth from this type of recreation management. Enhancing recreation in the WDO by providing experience-based opportunities in SRMAs could increase the number of visitors to the WDO, which would increase expenditures in the local economy, increasing income and encouraging the expansion of local business.

Alternative B would have the least acreage closed to OHV travel or limited to existing or designated routes and more lands designated as open, compared to Alternatives C and D. Having more open areas would promote OHV and would encourage expenditures by this recreation group and by hunters, who use OHV travel to hunt, benefiting the local economy.

This alternative promotes public information, which would consequently promote visitation of public lands, providing economic benefits.

Individual Effects under Alternative C

Of the action alternatives, Alternative C would have the least acreage devoted to management as SRMAs, which would appeal to visitors to WDO lands who appreciate lower levels of management in their recreation decisions. However, Alternative C would be the least likely to generate economic growth from recreation enhancement, described under Alternative B.

Alternative C have the most acreage closed to OHV travel and limited to existing or designated routes; they have no open OHV areas. Therefore, Alternative C would have the greatest potential for increased OHV restrictions to reduce expenditures by this recreation group and by hunters. However, Alternative C is the most likely to encourage more primitive nonmotorized recreation in the WDO due to the reduction in open OHV travel.

Individual Effects under Alternative D

Alternative D would have the same effects as those under Alternative B with respect to SRMAs. Under Alternative D, the acreage closed to OHV travel and that with OHV travel limited to existing or designated routes would be intermediate between Alternatives B and C. The effects of the reduction in open OHV travel are similar to those described for Alternative B; however, Alternative D could be more likely to affect expenditures due to the greater area of OHV restrictions.

Effects from Renewable Energy Management

Effects Common to All Alternatives

All alternatives would provide for the development of renewable energy, which could provide additional employment and income in the local area.

Individual Effects under Alternative A

Maintaining existing exclusion areas would limit the potential for renewable energy development and the consequent income and employment that renewable energy could generate within the local economy.

Individual Effects under Alternative B

Alternative B would have no exclusion areas for renewable energy development, which would maximize the potential for such development and for the consequent employment and income that could be generated by the industry.

Individual Effects under Alternative C

Alternative C would have the most acreage designated as exclusion zones, which would have the greatest potential to limit renewable energy development and the consequent income and employment that renewable energy could generate within the local economy.

Individual Effects under Alternative D

Alternative D would fewer areas designated as exclusion zones, compared to Alternative C. This would result in a lower potential to limit renewable energy development and the consequent income and employment that renewable energy could generate within the local economy than under Alternative C.

Effects from Transportation and Access Management

Effects Common to All Alternatives

Continued access to grazing, minerals operations, energy development and recreation would allow for the continued economic growth and contribution of these industries within the WDO.

Individual Effects under Alternative A

Improving and/or constructing roads would improve access, providing benefits to mineral and energy operations through increased efficiency and less vehicle wear and tear. The improved access provided by road improvements could encourage visitor use and increase expenditures within local economies. Decommissioning roads that are having negative environmental effects to protect habitat and sensitive species could remove access to these areas, which could increase operational costs; however, this action would protect sensitive resources and their associated non-market values. Decommissioning roads could discourage some visitors, which could decrease expenditures and income in the local economy.

Individual Effects under Alternative B

Alternative B is similar to Alternative A. However, roads would not be decommissioned unless alternative access is provided. This would reduce operational costs, as compared to Alternative A, but would provide less protection of sensitive resources and their associated non-market values.

Individual Effects under Alternative C

The socioeconomic effects from transportation and access management under Alternative C are the same as those identified under Alternative A.

Individual Effects under Alternative D

The socioeconomic effects from transportation and access management under Alternative D are the same as those identified under Alternative A.

Effects from Lands and Realty Management

Effects Common to All Alternatives

All alternatives would make lands available for disposal to improve the efficiency of managing high resource value lands, which could improve management of the industries that are important on BLM lands and that provide income and employment in the WDO and improve management of sensitive resources with high non-market values. Development on these disposed lands could increase the tax base and provide employment opportunities and income in the local economy. This could enable local governments to better handle the pressures of increasing population, the increasing need for public services and facilities, and increasing public demand for recreation. Converting public lands to private may temporarily reduce open land property values.

Renewable energy development would not occur in right-of-way exclusion areas, which could result in a decrease in the potential for economic growth based on development of this resource.

Individual Effects under Alternative A

Under Alternative A, 2,989,030 acres are identified as suitable for disposal, subject to disposal criteria within Zone 3. Assuming this area would be suitable for disposal and development could occur on all of the land, the assessed value for local governments within the WDO would increase by $3,736,288. Development of this land would increase its assessed value and could generate economic growth.

Individual Effects under Alternative B

Alternative B has the greatest area suitable for disposal, subject to disposal criteria. Assuming all 2,128,543 available acres would be suitable for disposal and that all of the land could be developed, the assessed value for local governments within the WDO would increase by $2,660,679. Development of this land would increase its assessed value and could generate economic growth.

The potential for economic growth based on renewable energy development within the WDO is greatest under Alternative B since no ROW exclusion areas are identified.

Individual Effects under Alternative C

Alternative C proposes the least area suitable for disposal, subject to disposal criteria. Assuming all 1,215,963 available acres would be suitable for disposal and that all of the land could be developed, the assessed value for local governments within the WDO would increase by $1,519,954. Development of this land would increase its assessed value and could generate economic growth. Alternative C would require no net loss or net gain in public land acreage within WDO. Therefore, the property tax base would not increase as a result of increased taxable acreage from land tenure adjustments. In addition, the potential for rural community growth could be limited by this requirement.

Individual Effects under Alternative D

Approximately 1,281,959 acres would be suitable for disposal under Alternative D, subject to disposal criteria. Assuming all available acres would be suitable for disposal and development could occur on all of the land, the assessed value for local governments within the WDO would increase by $1,602,449. Development of this land would increase its assessed value and could generate economic growth.

Effects from ACEC/RNA Management

Effects Common to All Alternatives

There are no effects common to all alternatives from ACEC/RNA management.

Individual Effects under Alternative A

There would minimal socioeconomic impacts, as the current ACEC is an area comprised of only 60 acres.

Individual Effects under Alternative B

The effects of ACEC/RNA management under Alternative B would be similar to those identified under Alternative A.

Individual Effects under Alternative C

Under Alternative C, four ACECs would be designated. Increased operational costs could occur to mineral and energy development to develop mitigation measures. Fluid, salable, and solid mineral and energy development would be precluded because ACECs also are defined as exclusion areas. No economic benefit from mineral and energy development would be realized within ACECs under Alternative C. Local economies could be affected due to reduced expenditures and employment, which could be offset by the protection of the sensitive resources and their associated value to society that are associated with these ACECs.

Individual Effects under Alternative D

The effects of ACEC/RNA management under Alternative D are similar to those identified under Alternative C.

Effects from Backcountry Byways Management

Effects Common to All Alternatives

Backcountry byways would stimulate vehicle travel, which would promote the purchase of goods and services by these travelers, benefiting local economies. These effects would increase over time as more retirees visit areas via vehicle travel.

Effects from National Trails Management

Effects Common to All Alternatives

Trails management may increase operational costs to mitigate impacts on trails.

Individual Effects under Alternative A

Increased operational costs resulting from mitigating impacts on trails is expected to be minimal under Alternative A.

Individual Effects under Alternative B

NSO restrictions on fluid and other leasable minerals and closures to commercial salable minerals could increase costs and decrease earnings for the individual mineral and energy developments.

Individual Effects under Alternative C

Closure to minerals activities under Alternative C would be more likely than Alternative B to increase costs and decrease earnings for individual mineral and energy development operations. This is because national trails management under Alternative C would be the most restrictive of all the alternatives to these operations.

Individual Effects under Alternative D

The level of restrictions (NSO and closures) under Alternative D would be intermediate between Alternatives B and C. Therefore, the potential level of socioeconomic effect would be intermediate between Alternatives B and C.

Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no effects common to all alternatives from Wild and Scenic River management.

Individual Effects under Alternative A

There would be no socioeconomic impacts from wild and scenic rivers management under Alternative A, as there are no wild and scenic rivers designated.

Individual Effects under Alternative B

The effects of wild and scenic rivers management under Alternative B would be the same as under Alternative A. There are no wild and scenic segments recommended as suitable under Alternative B.

Individual Effects under Alternative C

Three segments are being recommended as suitable under Alternative C. This would prohibit development and uses such as mineral and energy development and rights-of-way along these segments to protect Outstandingly Remarkable Values, as outlined in Section 1 (b) of the Wild and Scenic Rivers Act. Implementation of mitigation measures may increase operational expenses which may reduce local expenditures and other economic benefits; however, protecting the North Fork of the Little Humboldt, Washburn Creek, and Crowley Creek would preserve fish habitat, which could benefit fisheries in and downstream of the protected area and scenic recreation values. Improved fisheries could bring in greater fishing visitation, and improved scenic values would benefit and potentially increase use by visitors who enjoy nature-related tourism. Although there is no market value for preserving fish habitat, the potential increased fishing opportunities that it indirectly could provide does have a value in the local economy. For example, the BLM's public land statistics data estimated that 201,000 anglers spent an average of $1,233 per angler in fiscal 2006 in Nevada (a total of approximately $248 million) (BLM 2007d).

Individual Effects under Alternative D

The effects from wild and scenic rivers management under Alternative D are the same as those identified under Alternative A.

Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Restrictions applied to mining operations, energy development, and commercial recreation could increase operational costs or preclude development to protect WSAs. These increased costs would result in lower incomes for these operations and potential reductions in expenditures within local economies; however, protecting the resources for which the WSAs were designated also would protect their values for visitors and area residents, which could exceed the reduction in incomes and expenditures.

There are no impacts on socioeconomic resources from wilderness characteristics management under Alternatives A, B, and D; no management actions would alter the economic activities within the WDO.

Individual Effects under Alternative A

Based on the interim management plan and 3802 regulations, mining operations would incur increased expenses for permits to operate within WSAs. Other uses such as energy development could be precluded from development within WSAs. Restrictions also could apply to commercial recreation use, since "minimum tool restrictions" would apply. These impacts would vary based on the nature and scope of required restrictions and mitigation measures. Local economies could be affected due to reduced expenditures and employment.

Individual Effects under Alternative B

The effects from WSA and wilderness characteristics management under Alternative B are the same as those identified under Alternative A.

Alternative C

The effects from WSA and wilderness characteristics management under Alternative C are the same as those identified under Alternative A.

Closing areas with wilderness characteristics to minerals leasing, salable mineral disposal, and rights-of-way could restrict the level of economic activity that could occur in oil and gas, salable minerals, solid minerals, geothermal, and wind and solar energy development in these areas. Only 238 acres of lands with wilderness characteristics are under competitive lease for oil and gas. Historic leases within these areas covered approximately 50,313 acres; however, all of these leases are now closed. There fore, economic activity related to oil and gas development would be unlikely to be affected by these closures and exclusions. About 0.03 percent of areas open to salable mineral development and 0.03 percent of areas open to solid minerals development would be affected by management for wilderness characteristics. Therefore, the level of economic activity generated by developing these minerals could be curtailed, depending on the presence of these minerals in the areas with wilderness characteristics. Approximately 7,420 acres of the land in authorized or pending geothermal leases, which is about 4.2 percent of the WDO total competitive geothermal leases. About 6.5 percent of all WDO lands with high solar PV or CSP potential lie within areas with wilderness characteristics. Therefore, economic activity related to geothermal and solar energy development would be unlikely to be influenced by these closures and exclusions. Because approximately 0.3 percent of WDO lands with high wind potential are within areas with wilderness characteristics, management of these lands would be more likely to affect economic activity related to wind energy development.

Individual Effects under Alternative D

The effects from WSA and wilderness characteristics management under Alternative D are similar to those identified under Alternative A. This alternative provides additional means to protect WSAs if released by Congress. Implementing other designations could increase operational costs and impacts on local economies by reducing expenditures and employment, depending on the type of designation.

Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Under all of the alternatives, establishing watchable wildlife viewing sites would not measurably affect the social and economic activities that occur within the WDO, including access to traditional sites, recreation, grazing, mining, and renewable energy resource development. Wildlife viewing sites would encourage more visitation into undeveloped areas. This may benefit local economies that provide goods and services. These benefits are expected to be minimal.

Effects from Public Health and Safety Management

Effects Common to All Alternatives

Under all of the alternatives, public health and safety management would minimize the potential for environmental justice effects. Maintaining a database of hazardous conditions, removal and mitigation of dangerous or hazardous substances, public education, restriction of public activities in unsafe areas, and providing infrastructure when needed to protect public safety would minimize the potential for disproportionately affecting children, minorities, and low-income groups by protecting all WDO visitors. In addition, protecting public safety, providing law enforcement, removing hazardous materials, and providing public information would stabilize recreation use and attitudes, which could benefit local economies. Recreation users would be encouraged to buy goods and services to ensure safety and would continue to use public lands to recreate, since they would they feel reassured that they could do so in a safe manner. Indirect employment and economic benefits could also include fewer recreation-oriented injuries, which could result in fewer lost work days due to injuries. Constraining or restricting public activities on public lands also could restrict access to minerals and renewable resources and prevent the establishment of renewable energy ROWs. Requirements for fencing, signing, and other actions to protect public safety could increase the costs of minerals operations and renewable energy development. These effects on local economies from public health and safety management would be minimal.

Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no effects common to all alternatives from sustainable development management.

Individual Effects under Alternative A

Sustainable development is not addressed under Alternative A, and the potential for the resulting continued economic activity would not be captured under Alternative A.

Individual Effects under Alternative B

The potential for post-operation reuse of public lands could allow for continued economic use of sites of previous operations, such as mining, allowing for continued productivity, employment, and income to be derived from the sites. Economic development on sites that would be difficult and potentially costly for the WDO to manage would include participation from communities to determine the type of development that would be most beneficial to them. Reuse of these sites could help to provide economic diversity to offset the cyclic nature of the local economy (the boom and bust cycle associated with raw materials industries). Allowing public land disposal to facilitate sustainable development would improve commercial operation efficiencies and provide positive economic benefits.

Individual Effects under Alternative C

The effects from sustainable development management under Alternative C are the same as those described under Alternative B, except that disposal for reuse would be limited to maintaining no net loss of acreage within the WDO. This restriction could limit the potential for commercial economic

growth, but it would ensure that lands would be available for recreation, a significant industry in the local economy, and would remain in the public trust. Alternative C also would limit disposal of public lands, even if the disposal would provide a greater public benefit than if those lands were rehabilitated. This restriction also could preclude commercial development and limit socioeconomic benefits to communities from commercial uses, including restricting potential increases in the local tax base and in business activities. However, other benefits to the communities could be derived from recreation uses if these lands were rehabilitated.

Individual Effects under Alternative D

The effects from sustainable development management under Alternative D are the same as those described under Alternative B.

Cumulative Effects

Effects Common to All Alternatives

Past, current, and planned projects that have affected or would affect the economy, social structure, or tribal interests in the planning area, or the resources or resource uses occurring on WDO lands, would result in cumulative socioeconomic impacts. The following past and current activities have affected the trends in resource uses in the planning area and the incomes and employment derived from these uses, as well as environmental justice populations in the planning area. Recreation and OHV use, livestock grazing, and minerals and energy development have occurred in the planning area and would continue to influence the economy and social well being of users of public lands within the region.

Restrictions on OHV use that could occur as a result of the proposed RMP for the WDO would not be expected to change the economic or social contribution of recreation in the local economy or within the region, due to continued population growth and demand. However, these restrictions could increase pressure on areas in which open motorized use is available.

Continued livestock grazing on WDO public lands would contribute to the incomes of local permittees, which would be a factor in maintaining a unique way of life that is present in the region and adding incrementally to ranchers' incomes locally and regionally. This would not apply to Alternative C, Option 2.

Renewable energy development and fluid minerals development within the WDO would continue to contribute incrementally toward the growth of the energy industry in the region and the country.

Individual Effects under Alternative A

Alternative A would maintain existing management and would have similar effects to those described above for Effects Common to All Alternatives. The potential for sustainable development to contribute to the level of overall economic activity would not be realized under Alternative A.

Individual Effects under Alternative B

Alternative B would impose the fewest restrictions on the economic activities that occur and would continue to occur within the WDO. In combination with continued population growth, increases in

the level of recreation participation, increased interest in renewable energy, and growth in the energy industry, Alternative B would be the most likely alternative to contribute toward the employment, income, revenue, and overall economic growth associated with these conditions.

Individual Effects under Alternative C

Alternative C would impose the most restrictions on the economic activities that occur and would continue to occur within the WDO. In combination with continued population growth, increases in the level of recreation participation, increased interest in renewable energy, and growth in the energy industry, Alternative C would contribute the least toward the employment, income, revenue, and overall economic growth associated with these conditions. In addition, Option 2 would detract from the incomes of local permittees, which would be a factor in the decline of a unique way of life that is present in the region and incrementally reducing ranchers' incomes locally and regionally.

Individual Effects under Alternative D

Alternative D would impose more protective restrictions than Alternatives A and B but fewer than Alternative C. Therefore, the incremental economic contribution of Alternative D with respect to growth in the tourism and recreation industry and in the energy industry, as well as the contribution to preserving the ranching lifestyle and to ranchers' incomes, would be intermediate between Alternatives B and C.

4.6 Unavoidable Adverse Impacts

Section 102(C) of NEPA requires disclosure of any adverse environmental effects that cannot be avoided should the proposal be implemented. Unavoidable adverse impacts are those that remain, following the implementation of mitigation measures, or those for which there are no mitigation measures. Virtually all potential unavoidable adverse impacts are generally long term, indirect, and difficult to quantify. Some unavoidable adverse impacts would occur by implementing the RMP and from the proposed management under one or more of the alternatives. Others result from everyday use of public lands within the planning area. The alternatives were developed to respond to these impacts and to be protective of the resources, while allowing land use to be as diverse as possible.

Continuing to allow surface-disturbing and disruptive activities, as required by the BLM multiple-use mandate, would result in unavoidable adverse impacts, sometimes to multiple resources simultaneously, as described below. Although these impacts are mitigated to the extent possible, unavoidable damage is inevitable. Restoration activities would be the primary cause of unavoidable adverse impacts from management actions, while public uses, such as livestock grazing, mineral development, and OHV use, would be the primary causes of unavoidable adverse impacts by the public.

Permanently converting vegetative resources to other uses, such as transportation and mineral and energy development, reduces the quantity of vegetation resources and thus could inadvertently displace wildlife through a decrease in the quantity and quality of forage

Energy and mineral resource extraction on public lands potentially creates visual intrusions, soil erosion, compaction problems, loss of vegetation cover, and damage or destruction of cultural and paleontological resources.

Portions of the resource area with increased visitation and therefore more intense recreational use would continue to experience scarring, increased soil erosion, and loss of vegetation. Although these latter impacts are unavoidable, if they are concentrated in areas already disturbed, this would reduce the spread of impacts from increased visitation to more remote or less frequented areas. However, changes in the amount of recreational visitation and patterns of use could also result in increased conflicts between users, unanticipated changes in resource conditions, vandalism, and illegal collection of cultural resources. Although mitigation measures could be implemented for scientific data recovery of cultural resources, the impacts on areas of any excavation would be unmitigable. The number of sites anticipated to be inadvertently damaged is unknown but is directly proportional to the acreage disturbed. Natural processes, such as erosion and natural decay or deterioration, could also result in unmitigated damage to cultural resources.

Conflicts between user types, such as recreationists who seek more primitive types of recreation and motorized vehicle users who share the same recreation areas, are unavoidable adverse impacts. As recreation demand increases, recreation use would disperse to other parts of the planning area, which could create conflicts with previous uses of those areas. Under alternatives in which mineral development is expected to be higher, recreation use would be transferred from those areas, which would increase the extent and frequency of conflict between these incompatible user groups. Unavoidable adverse impacts would occur, even though attempts are made to minimize these impacts by limiting the protection level necessary to accomplish management objectives and by providing alternative use areas for impacted activities.

Unauthorized OHV travel could cause scarring, increased soil erosion, and loss of vegetation cover. Introduced weeds could increase the likelihood of fires and could reduce canopy coverage, leaving soils subject to increased erosion. Additional soil erosion would result from any facility developments, including recreation sites, livestock water and other range improvements, and utility and road facilities that are not properly restored even after mitigation measures are applied. Large-scale, stand-replacing wildland fires are expected to occur within the planning area over the life of the RMP; these would quickly change both the habitat value for biological resources, resulting in the decline of habitat quality and the scenic quality of the landscape, without regard to visual resource objectives.

Unavoidable adverse impacts would result from the accidental or unauthorized introduction of exotic plant or animal species, either from OHV use or other vectors, which in turn could harm or cause loss of populations of native plants or animals. Ecosystem components could be impacted if fire-prone areas are not treated before a high-intensity wildland fire. If fuels are not treated, the risk of loss to life and property would be higher as rural growth expands.

In addition, unavoidable adverse impacts would result from implementing proposed restrictions on recreation, livestock grazing, and other resource uses to protect sensitive resources and other values. These restrictions would lessen the ability of operators, permittees, individuals, and groups to use public lands and could increase operating costs.

Competition for habitat resources is anticipated among wildlife, livestock, and wild horses and burros. The extent of the impacts would vary by season and drought cycle. Although there might be short-term periods of significant impacts, long-term management would ensure that these uses are compatible to the extent possible.

4.7 Irreversible and Irretrievable Commitment of Resources

Section 102(2)C of NEPA requires a discussion of any irreversible or irretrievable commitments of resources from implementing the RMP. Implementing actions in accordance with the selected alternative may result in impacts that could be irreversible or irretrievable or both.

Irreversible commitments of resources refer to the loss of future options and apply primarily to the effects of nonrenewable resources, such as minerals, cultural resources, and soils, that cannot be regained. Examples are the extinction of a species, disturbance to protected cultural resources, or the removal of mined ore. An irretrievable commitment of resources involves the loss of production, harvest, or use of natural resources, such as any locatable mineral ore, or oil and gas, over time. Examples are the temporary loss of timber productivity in forested areas that are kept clear for use as a power line right-of-way or road.

Implementing any of the management plan alternatives would result in some impacts that could be characterized as irreversible and irretrievable commitments. For most impacts, the RMP would provide objectives for resource management and guidance for future activity and implementation-level decisions that minimize the potential for irreversible and irretrievable impacts. Some localized resources could be disrupted but could be mitigated. However, implementing the alternatives would result in some irreversible or irretrievable losses, which are described below.

Livestock forage production may be lost in an area that is undergoing restoration or that was subject to a wildfire. Once the area is restored, forage production would increase and livestock grazing could resume. In this case, the production lost is irretrievable, but the action is not irreversible.

Mineral and energy development could result in an irreversible loss of vegetation resources, primitive recreational experiences, wildlife habitat, and livestock forage. Surface-disturbing and disruptive activities associated with mineral extraction and energy development would permanently alter soil, affecting habitat, and is also likely to damage cultural and paleontological resources. Reclaiming disturbed areas would reduce the magnitude of these impacts following the action, but some outcomes would be irreversible or irretrievable. Examples of the latter are as follows:

- Changes in wildlife migration patterns and displacement of local species populations during the activities, causing an irreversible loss in local wildlife populations;
- An irretrievable commitment of nonrenewable fossil fuels, such as oil, gas, and coal, from extracting potential wells developed during the next 20 years; and
- Lands occupied by mineral extraction would permanently lose habitat values and would have reduced carrying capacity for wildlife resources.

Visual characteristics near mining sites could be irretrievably lost during development and operation; that is, opportunities to view undisturbed settings would be lost during either restoration treatments or mineral activities, and these would be irretrievable. Slight increases in sediment, salinity, and nonpoint source pollution from these activities might also result in an irretrievable degradation of water quality. The extraction and development of mineral resources results in the irretrievable and irreversible loss of those minerals. The withdrawal of areas from leasable, locatable, and salable mineral entry would cause an irretrievable loss of mineral extraction during the life of the RMP.

Changes in vegetation communities from drought, wildfire, cheatgrass invasion, invasive plants, or restoration treatments may not be reversible or may be reversible only after many decades. Some changes would be irretrievable. Changes in vegetation communities that would result from restoring or not restoring areas may be irreversible or may be reversible only after many decades. Invasion by cheatgrass and other noxious or invasive weeds may be irreversible. The resources committed to manage weeds would be irretrievable. Wildlife that depend on affected habitats might be displaced and populations might be reduced as carrying capacity of the range is reduced. Irreversible and irretrievable losses of wildlife habitat indirectly reduce the amount of suitable special status species habitat. However, management prescriptions and mitigations prescribed under the alternatives are intended to reduce the magnitude of these impacts and would restore some of the soil, vegetation, and habitat lost. Effects on special status wildlife or plants from authorized and unauthorized activities, wildfire, invasive plants, or restoration treatments may be irreversible.

Construction of roads, well pads, and other transportation infrastructure improvements create an irretrievable loss of habitat and impair important visual elements, particularly near communities.

Stand-replacing fires might cause an irreversible loss of some key ecosystem components. Loss of soils following wildfires, or from erosion during restoration treatments, would be irretrievable. The effect of a high intensity wildfire or one covering many acres would be reversible only after several decades. Resources committed for fire suppression and rehabilitation would be irretrievable. Changes in wildlife habitat from wildfire, invasive plants, or restoration treatments may be irreversible or may be reversible only after many decades.

Scarring of the landscape resulting from authorized and unauthorized OHV use can be irreversible.

Undiscovered cultural resources could be unintentionally affected by management activities. Cultural resources are by their nature irreplaceable, so altering or eliminating any such resource, be it National Register eligible or not, represents an irreversible and irretrievable commitment. Authorized mitigation of cultural sites before disturbance and unauthorized collecting and vandalism would be an irreversible commitment of the resource. Authorized and unauthorized collection of fossils would also be an irreversible commitment of the resource.

The exact nature and extent of any irreversible and irretrievable commitment of resources cannot be defined due to uncertainties about location, scale, timing, and rate of implementation, as well as the relationship to other actions and the effectiveness of mitigation measures throughout the life of the plan.

4.8 Relationship of Short-Term Uses of the Environment to Long-Term Productivity

Section 102(C) of NEPA requires a discussion of the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity of resources. As described in the introduction to this chapter, "short-term" defines those effects that are anticipated to occur while the alternative is being implemented, that is, within one to five years. "Long-term" defines those effects that are anticipated to occur for an extended period after the first five years of alternative implementation but within the life of the RMP, which is projected to be 20 years. These effects could last several years or more.

Regardless of which alternative is selected, management activities would result in various short-term adverse effects, such as increased localized soil erosion, smoke and fugitive dust emissions affecting air quality, damage to vegetation and fish and wildlife habitat, and decreased visual resource quality. Other short-term effects could improve long-term productivity and provide beneficial effects.

Short-term effects, such as those associated with mineral development, could result in long-term degradation of wilderness values and scenic quality. Short-term effects associated with route designations, maintenance, and alterations also could result in long-term effects on recreation and rangeland management activities and wildlife movement within corridors. Alternatively, short-term effects, such as vegetation treatments, would beneficially affect long-term productivity for wildlife and rangeland management by increasing available forage. Short-term effects of wildland fire management and vegetation treatments could result in long-term improvements for scenic quality.

Management actions and best management practices minimize the effect of short-term uses and reverse the change during the long term. However, BLM lands are managed to foster multiple uses, and some long-term productivity impacts might occur regardless of management approach.

Surface disturbing and disruptive activities, including mineral and energy development, dispersed recreation, livestock grazing, infrastructure development, and human use, would result in the greatest potential for impacts on long-term productivity. The disturbance of soils, vegetation, and wildlife habitats from minerals exploration and extraction and livestock grazing, as well as from recreation use, would reduce the long-term productivity of the environment in local areas where revegetation or restoration of the natural environment could not be fully realized over time.

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CHAPTER 5 – CONSULTATION AND COORDINATION

5.1 INTRODUCTION

This chapter is a description of the public outreach and participation opportunities made available through the development of the draft RMP/EIS and the coordination and consultation efforts with tribes, government agencies, and other stakeholders that have transpired to date. It includes a list of preparers of the document and the agencies, organizations, and individuals that received a copy of the draft RMP/EIS for review. There have been and will continue to be many ways for the public to participate in the planning process for public lands under the jurisdiction of the WDO.

5.2 PUBLIC COLLABORATION AND OUTREACH

5.2.1 Scoping Process

Scoping is the term used in the Council on Environmental Quality Regulations implementing NEPA (40 Code of Federal Regulations, Part 1500 et seq.) to define the early and open process for determining the scope of issues to be addressed in the planning process. The scoping process gets the public involved in identifying significant issues of land use management actions. The process also helps identify any issues that are not significant and that can thereby be eliminated from detailed analysis. The list of stakeholders and other interested parties is also confirmed and augmented during the scoping process.

5.2.1.1 Notice of Intent

The notice of intent (NOI) is the legal document notifying the public of the BLM's intent to initiate the planning process and to prepare an EIS for a major federal action. The NOI invites the participation of the affected and interested agencies, organizations, and members of the general public in determining the scope and significant issues to be addressed in the planning alternatives and analyzed in the EIS. The NOI for the Winnemucca RMP was published in the *Federal Register* on March 25, 2005[1]. The scoping period for receipt of public comments ended on May 24, 2005.

5.2.1.2 Press Releases

Local and regional newspapers throughout the planning area were used to disseminate information on the Winnemucca RMP scoping and planning process. The BLM prepared press releases to notify the public of the project, to announce the open houses, to request public comments, and to provide contact information. Press releases were printed in the following newspapers during the week of April 25, 2005:

NEWSPAPERS	
Name	**Location**
This & That	Gerlach, Nevada
The Humboldt Sun	Winnemucca, Nevada
Lovelock Review-Miner	Lovelock, Nevada
Reno Gazette-Journal	Reno, Nevada

[1] "Notice of Intent to Prepare an Environmental Impact Statement (EIS) and to Initiate the Public Scoping Process." *Federal Register* 70, no. 57 (March 2005): 15,348-15,349.

5.2.1.3 Scoping Meetings

The BLM held public scoping meetings in Winnemucca on May 2, in Lovelock on May 3, in Gerlach on May 4, and in Reno on May 5, 2005. The BLM provided the local media with press releases announcing the time, location, and purpose of these meetings.

The scoping meetings were presented in an open house format, allowing the public to receive information, ask questions, and provide input. Fact sheets and handouts about the project and a map of the planning area were provided, as was a list of the preliminary planning criteria and anticipated key issues related to the project. Single-page summaries of each resource issue were provided as convenient references to take from the meetings. Site and resource maps were displayed illustrating the current situation and management techniques practiced among different resources and land areas. A slide presentation highlighted key issues and summarized the planning process. Prominent, handicapped-accessible local facilities in informal settings were chosen as venues to encourage broad participation.

Attendees were encouraged to mail in written comments and questions or to fill out comment cards specific to the Winnemucca RMP. Copies of the briefing package and planning criteria were also made available at the comment table.

5.2.2 Project Web Site

In March 2005, a WDO RMP/EIS project Web site was launched to serve as a clearinghouse for project information during the planning effort. The Web site, at www.nv.blm.gov/wdormp, provided a link for site visitors to submit comments about the project. Due to security issues and upgrades, the Web site was temporarily shut down in April 2005 and remained so through the end of the scoping period. The public was urged in public notices and during the scoping meetings to use other means to provide their comments. In the summer of 2006 the Winnemucca RMP public Web site was brought back online with a new Web address (www.nv.blm.gov/winnemucca/rmp/) and has been active intermittently ever since. The BLM continuously updates the Web site with information, documents, and announcements.

5.2.3 Newsletters

Newsletters are published throughout the course of the RMP/EIS process and are posted on the BLM Web site. Participants also may request to receive newsletters through e-mail. The newsletters remind the public of how they can comment and get involved and includes a calendar of events. Each edition addresses in detail issues of concern identified during the scoping process. On March 23, 2005, the first project newsletter was mailed to over 1,600 individuals and organizations that had been interested in or participated in other activities hosted by the WDO. The purpose of this newsletter was to inform them of the WDO RMP planning effort, the location of the open houses, and the opportunity to comment. In addition, the newsletter gave the public various methods to submit their comments, including a dedicated e-mail address (comments@wformp.com), a fax line ([775]-623-1503), and the BLM WDO address to mail comments. A second newsletter was distributed in March 2007 that provided a project update.

5.3 CONSULTATION AND COORDINATION

The Winnemucca RMP will provide guidance for a vast area of public land in Nevada and necessarily requires the coordination of a wide variety of organizations with interests in the area. Among those are governmental bodies that create, administer, and monitor policy for these, as well as adjacent, lands. The BLM established a coordinated effort in developing the Winnemucca RMP by seeking the active participation of these parties.

On February 16, 2005, the BLM invited 33 local, state, federal, and tribal representatives to participate as cooperating agencies for the Winnemucca RMP. Of these, nine agencies accepted this offer to participate in the BLM WDO planning process as cooperating agencies:

- Humboldt County;
- City of Winnemucca;
- Washoe County;
- Pershing County;
- N-2 Grazing Board;
- Nevada Department of Agriculture;
- Nevada Department of Wildlife;
- US Fish and Wildlife Service; and
- US Bureau of Reclamation

These entities will "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM Land Use Planning Handbook H-1601-1).

The following section documents the BLM's consultation and coordination efforts during the preparation of this draft RMP/EIS. Consultation is an ongoing effort throughout the entire process of developing the final RMP/EIS.

5.3.1 Native American Consultation

Federally recognized Native American tribes have a unique legal and political relationship with the government of the United States. Executive Order 13175 requires federal agencies to coordinate and consult on a government-to-government basis with sovereign Native American tribal governments whose interests may be directly and substantially affected by activities on federally administered lands. Other laws, regulations, DOI guidance and executive orders require consultation to identify the cultural values, the religious beliefs, the traditional practices, and the legal rights of Native American people, which could be affected by BLM actions on federal lands. These include the National Historic Preservation Act (NHPA) of 1966 (as amended), American Indian Religious Freedom Act of 1978, the Native American Graves Protection and Repatriation Act, DOI Secretarial Order No. 3215 (DOI 2000), 512 Department Manual Chapter 2 (DOI 1995), and BLM Manual H-8160-1 (DOI 1994), and Executive Order 13007 Indian Sacred sites.

All Native American tribes and organizations with interests in the WDO planning area were contacted by mail and encouraged to be cooperating agencies. Tribes have been participating in the RMP/EIS process through meetings and other contacts. During follow-up telephone calls to the tribes, each was offered the opportunity to meet with WDO representatives or to visit the study area. The BLM met with Native American organizations on May 24, 2005, and May 26, 2005, in Winnemucca and Reno, respectively. During the first meeting, representatives from the BLM met with 4 tribal representatives from the Fort McDermitt Tribe, Battle Mountain Band, and Lovelock Paiute Tribe to offer information on developing the Winnemucca RMP and to discuss tribal concerns to be addressed in the RMP. Similarly, BLM staff met with tribal representatives from the Fort McDermitt Tribe, Cedarville Rancheria, Susanville Indian Rancheria, and Pyramid Lake Tribe on May 26, 2005.

With the assistance of a contractor, BLM conducted a confidential ethnographic assessment of the WDO planning area. The primary objectives of this study were as follows:

- Conduct a thorough archival and literature review to identify and document Native American traditional occupancy and use of lands and resources, as well as previously recorded Native American places of cultural and religious importance, within the study area;
- Elicit contemporary concerns and recommendations for managing traditional resources and cultural and religious values from tribal leaders, elders, or representatives;
- Document the WDO's Native American consultation efforts; and
- Elicit tribal recommendations for managing the lands administered by the WDO.

Tribes will continue to be contacted and may consult with the BLM throughout the RMP/EIS process.

5.3.2 Cultural Resource Consultation

The BLM has specific responsibilities and authorities to consider, plan for, protect, and enhance historic properties and other cultural properties that may be affected by its actions or actions it permits. The principal federal law addressing cultural resources is the NHPA (16 USC Section 470), and its implementing regulations (36 CFR 800). These regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties, for assessing the effects of federal actions on historic properties, and for guiding project proponents consulting with appropriate agencies to avoid, reduce, or minimize adverse effects. The BLM in Nevada meets its responsibilities under Section 106 and other provisions of the NHPA through a state protocol agreement with the Nevada State Office of Historic Preservation (SHPO). Using authorities developed under a nationwide BLM programmatic agreement, the BLM follows an alternate procedure to the 36 CFR 800 regulations to meet its historic preservation responsibilities. Cultural resource consultation with the SHPO, Native American tribes and interested parties is required under the NHPA and a variety of laws, regulations, guidance, and departmental and executive orders.

The state protocol agreement requires that the BLM invite the SHPO to participate early in the process of preparing or amending land use plans in order to identify cultural resource issues that should be addressed. The SHPO was invited but declined to be a cooperating agency for the

RMP/EIS. The SHPO has also received copies of consultation correspondence with the Native American tribes. The BLM will invite the SHPO to comment on the draft and final land use plans and on any proposed cultural resource use allocations developed as a result of the RMP/EIS process. Additional consultations with the SHPO and Indian Tribes also may be required during implementation of individual projects. Consultations with the SHPO are ongoing and will be completed before the Record of Decision is signed.

5.3.3 Special Status Species Consultation

Coordination has occurred with NDOW and USFWS on several occasions with regard to special status species. The BLM received a species list from USFWS that will be used in future Section 7 consultation prior to the release of the proposed RMP, final EIS. Section 7 consultation includes the preparation of a Biological Assessment by the BLM and subsequent Biological Opinion prepared by the USFWS that includes terms and conditions to minimize impacts to federally listed, proposed and candidate species.

5.3.4 Resource Advisory Council

A RAC is a committee established by the Secretary of Interior to provide advice or recommendations to BLM management (BLM 2005a). A RAC is generally composed of 15 members of the public representing different facets. The Sierra Front-Northwestern Great Basin RAC includes a panel of mixed expertise ranging from natural resources and Native American culture to mining, transportation, and politics. The group is facilitated by the public affairs officer from the BLM. In March 2005, five new members were incorporated into the WDO RAC to replace previous members. The first meeting with the new RAC was held on April 28, 2005 at the Winnemucca District Office. After a presentation of the RMP process highlighting the components and issues of the planning area, preliminary planning criteria, and project status, the RAC elected to form a subgroup to provide assistance and input. The RAC subgroup assisted in developing the alternatives at the following meetings:

- Fernley, Nevada on July 11, 2005;
- BLM Carson City District Office on July 29, 2005;
- Winnemucca District Office from September 17-18, 2005;
- Winnemucca District Office from November 11-13, 2005;
- Winnemucca District Office from January 17-18, 2006;
- Winnemucca District Office on March 15, 2006;
- Winnemucca District Office from June 8-9, 2006;
- Winnemucca District Office on November 30, 2006;
- Winnemucca District Office on January 11, 2008.

5.4 Distribution List

Scoping for the draft RMP/EIS began in March 2005. The first newsletter for the WDO RMP project was mailed on March 23, 2005, to more than 1,600 individuals from the public, agencies, and

organizations that have participated in past BLM projects or requested to be on the mailing list. Recipients of the newsletter and visitors to the scoping open houses were asked to specifically request to stay on the official RMP project mailing list to receive future mailings. In addition, the distribution list has been updated throughout the development of the draft RMP/EIS. The distribution list of agencies, organizations, and individuals who have been a part of the RMP/EIS process is available in the administrative record. The distribution list for the draft RMP/EIS is maintained by the WDO and is available on request.

5.5 List of Preparers

An IDT of resource specialists from the BLM WDO prepared this RMP/EIS (Table 5-1). Tetra Tech, Inc. assisted the BLM in preparing these documents and in the planning process (Table 5-2).

Table 5-1
RMP/EIS Preparers - BLM

Name	Years Experience	Role/Responsibility	Education
		Bureau of Land Management	
Rodger Bryan	32	Project Manager (2009); Wildlife	BS, Wildlife
Joey Carmosino	4	Recreation	MA, Recreation Administration
Jerry Carpenter	25	Facilities/Road Manager	NA
Delores Cates	30	Visual Resources and Fluid Leasable Minerals	BS, Geology
Amanda DeForest	16	Livestock Grazing	BS, Wildlife Management/Rangeland Management
Ken Detweiler	32	Special Status Species/Wildlife	BS, Wildlife
Craig Drake	17	Water Resources	BS, Resource Management/Hydrology
Glenna Eckel	17	Wild Horses and Burros	BS, Multi-Resource Management
Bob Edwards	35	Project Manager /Team Lead (2007-2008, 2010-)/ Lands/Realty/Transportation/ Renewable Energy	BS, Business Management
Mark Ennes	4	Cultural Resources/Paleontology	MA, Anthropology
Jeff Fedrizzi	13	Fire Management	MS, Wildlife Management
Mark Gingrich	4	Hazmat	BS, Geology
Gail Givens	25	District Office Manager (2004-2008)	BS, Natural Resource Conservation
Gerald Gulley	5	Wilderness	MS, Forest Recreation
Emily Harris	4	Wild and Scenic Rivers Report	MS, Natural Resources Recreation
Dave Hays	15	Nonrenewable Resources	MS, Rangeland Ecosystem Science

Table 5-1
RMP/EIS Preparers - BLM

Name	Years Experience	Role/Responsibility	Education
Arlan Hiner	33	Renewable Resources	BS, Forestry
Heidi Hopkins	2	Wild Horses and Burros	MS, Vertebrate Zoology
Jeff Johnson	19	Project Manager 2003-2006; Fire Resources, Social and Economic, ACEC and WSR Evaluation	BS, Conservation of Natural Resources
Dave Lefevre	3	Recreation	BS, Recreation Management
Vince Lincoln	7	GIS	BS, Geography
Ken Loda	24	Minerals and Geology	BS, Geology
Greg Lynch	9	Fish and Wildlife, Special Status Species	BS, Agriculture/Fishery Science
Peggy McGuckian	35	Cultural Resources, Native American Religious Concerns, Historic Trails, Paleontological Resources	BA, Anthropology MA, Anthropology
Derek Messmer	7	Vegetation	BS, Resource Management/Forestry and Range Management
Ronda Purdy	7	Vegetation/Livestock Grazing	BS, Range Conservation
Gene Seidlitz	20	District Manager	Rangeland Management
Jamie Thompson	19	Public Affairs	JD, Law
Matt Varner	5	Fish and Aquatic/Riparian Habitat	BS, Wildlife and Fisheries Management
Mike Zielinski	33	Soils/Riparian	BS, Resource Management/Soils

Table 5-2
RMP/EIS Preparers - Contractor

Name	Years Experience	Role/Responsibility	Education
		Contractor—Tetra Tech, Inc.	
Cindy Adornetto	24	Recreation	MS, Environmental Policy and Mgmt., University of Denver; BS, Natural Resource Mgmt., Colorado State University
Kelly Bayer	16	Fish and Wildlife, Special Status Species, Transportation and Access	BS, Biology and Marine Science, University of Miami
Mike DaSilva	20	Wild Horse and Burros	BA and MS, Biology, Eastern Washington University
Kevin T. Doyle	25	Cultural Resources, Tribal Interests	BA, University of California, Santa Barbara, Continuing Studies in Anthropology, Historic Preservation, and Cultural Resource Management; California State University, Los Angeles; University of California, Los Angeles; University of Southern California, School of Architecture; and University of Nevada, Reno
Yashekia Evans	11	GIS	
Liz Fagen	4	Public Health and Safety	MS, Environmental Engineering, Colorado State University Fort Collins BS, Civil Engineering, University of Wisconsin Madison
Cameo Flood	24	Wildland Fire Management	BS, Forest Resource Management, University of Montana
Derek Holmgren	10	Project Management/Lands and Realty, Visual Resources, Special Designations	MPA and MSES, Indiana University; BS and BA, Oregon State University
Cliff Jarman	20	Soils, Geologic Resources, Cave and Karst Resources, Paleontological Resources, Minerals Resources	MS, Geophysics, New Mexico Institute of Mining and Technology BS, Geology, University of New Mexico

Table 5-2
RMP/EIS Preparers - Contractor

Name	Years Experience	Role/Responsibility	Education
Genevieve Kaiser	20	Socioeconomics, Renewable Energy	MS, Energy Management and Policy, University of Pennsylvania; BA, Economics, College of William and Mary; Professional Certification: GIS, University of Denver
Cindy Schad	14	Word Processing	BFA, Creative Writing
Bob Sculley	38	Air Resources	MS, Ecology, University of California, Davis BS, Zoology, Michigan State University
Randolph Varney	18	Writer, Editor	MFA, Writing, University of San Francisco BA, Technical and Professional Writing, San Francisco State University
Tom Whitehead	30	Water Resources	MS, University of Arizona BS, California State University Hayward BA, San Francisco State University
Meredith Zaccherio	5	Vegetation, Fish and Wildlife, Special Status Species, Wilderness Characteristics	MA, Biology, Boston University BS, Biology, Binghamton University BS, Environmental Science, Binghamton University
Subcontractor—EMPS: Environmental Management & Planning Solutions, Inc.			
David Batts	17	NEPA Specialist/QA-QC	MS, Natural Resource Planning, Michigan State University BS, International Development, Lewis and Clark College
Holly Prohaska	11	Project Management/Livestock Grazing	MS, Environmental Management, University of San Francisco; BA, Marine Science, Biological Pathway, University of San Diego
Jennifer Whitaker	10	Socioeconomics/Recreation/ BMP development	MSM, Regis University BS, Public Affairs, emphasis in Natural Resource Management, Indiana University
Subcontractor—Far Western Archaeological			
Craig Young	20	Archaeologist	PhD

Table 5-2
RMP/EIS Preparers - Contractor

Name	Years Experience	Role/Responsibility	Education
		Subcontractor—BENGSTON CONSULTING	
Ginny Bengston	10	Ethnographer	MA

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CHAPTER 7 – GLOSSARY

ABORIGINAL BURNING. The lighting of fires by native people to alter the vegetation or expose game for hunting, such as to promote healthier grasslands or to suppress shrub and tree encroachment, or accidental ignitions.

ADAPTIVE MANAGEMENT. A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify management policy, strategies, and practices.

ANIMAL UNIT MONTH (AUM). The amount forage necessary for the sustenance of one cow or its equivalent for a period of one month (approximately 800 pounds of air-dry material per AUM). A full AUM's fee is charged for each month of grazing by adult animals if the grazing animal (1) is weaned, (2) is six months or older when entering public land, or (3) will become 12 months old during the period of use. For fee purposes, an AUM is the amount of forage used by five weaned or adult sheep or goats or one cow, bull, steer, heifer, horse, or mule. The term AUM is commonly used in three ways: (1) stocking rate, as in X acres per AUM, (b) forage allocation, as in X AUMs in allotment A, and (3) utilization, as in X AUMs consumed from Unit B.

ANNUAL PLANT. A plant that completes its life cycle and dies in one year or less.

APPROPRIATE MANAGEMENT LEVEL (AML). A single number that is the high point of an established population range to maintain a thriving natural ecological balance, based on available forage, water, and other resource needs or conflicts (relating to management of wild horses and burros).

ACQUIRED LANDS. Lands in federal ownership that were obtained by the government through purchase, condemnation, or gift or by exchange. Acquired lands constitute one category of public lands.

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). An area established through the planning process, as provided in the Federal Land Policy and Management Act of 1976, where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values; or to fish and wildlife resources or other natural systems or processes; or to protect life and afford safety from natural hazards.

AVOIDANCE AREA. An environmentally sensitive area where rights-of-way may be granted only when no feasible alternative route is available.

BEST MANAGEMENT PRACTICE (BMP). A suite of techniques that guide, or that may be applied to, management actions to aid in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory (BLM Handbook H1601-1; Glossary).

Biological Crust. A complex mosaic of living organisms—algae, cyanobacteria (blue-green algae), bacteria, lichens, mosses, liverworts, and fungi—that grow on or just below the soil surface.

Cave. Any naturally occurring void, cavity, recess, or system of interconnected passages that occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any mine, tunnel, aqueduct, or other man-made excavation) and that is large enough to serve as habitat for wildlife. Such term includes any natural pit, sinkhole, or other feature that is an extension of the entrance.

Community Recreation-Tourism Market. A community or communities that depends on public lands recreation and related tourism use, growth, and development. Major investments in facilities and visitor assistance are authorized within SRMAs where the BLM's strategy is to target demonstrated community recreation-tourism market demand. Here, recreation management actions are geared toward meeting the primary recreation-tourism market demand for specific activity, experience, and benefit opportunities. These opportunities are produced through maintaining prescribed natural resource and community setting character and by structuring and implementing management, marketing, monitoring, and administrative actions accordingly.

Condition Class (CC). A classification of a vegetation community's variance or departure from historic fire conditions. Fire Condition Classes can be Fire Condition Class 1, representing low departure from historic fire regime; Fire Condition Class 2, representing moderate departure from historic fire regime; or Fire Condition Class 3, representing high departure from historic fire regime.

Critical Growing Period. The period in a plant's growth cycle when food (carbohydrate) reserves are the lowest and grazing is most harmful; for example, in grass species this period begins with the boot stage and closes with complete maturation of the fruit (seed).

Critical Habitat. Habitat designated by the US Fish and Wildlife Service under Section 4 of the Endangered Species Act and under the following criteria: 1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features essential to the conservation of the species and that may require special management of protection; or 2) specific areas outside the geographical area by the species at the time it is listed but that are considered essential to the conservation of the species.

Crucial Winter Range. A BLM definition that applies to elk and mule deer habitat and made up of areas defined by Nevada Department of Wildlife as winter concentration areas and severe winter range:

- **Winter Concentration Area**—That part of winter range where densities are at least 200 percent greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of ten.
- **Severe Winter Range**—That part of the overall range where 90 percent of the individuals are located when the annual snowpack is at its maximum or temperatures are at a minimum (or both) in the two worst winters out of ten.

Cultural Resources. Locations of human activity, occupation, or use. Cultural resources include archaeological, historic, or architectural sites, structures, or places with important public and

scientific uses and locations of traditional cultural or religious importance to specific social or cultural groups.

CULTURAL RESOURCES INVENTORY. A procedure to assess the potential presence of cultural resources. There are three classes of surveys:

- **Class I.** An existing data survey is an inventory of a study area to (1) provide a narrative overview of cultural resources by using existing information, and (2) to compile existing cultural resources site record data on which to base the development of the BLM's site record system.
- **Class II.** A sampling field inventory designed to locate, from surface and exposed profile indications, all cultural resource sites within a portion of an area so that an estimate can be made of the cultural resources for the entire area.
- **Class III.** An intensive field inventory designed to locate, from surface and exposed profile indications, all cultural resource sites in an area. On completion, no further cultural resources inventory work is normally needed.

CUMULATIVE EFFECTS. The direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action.

Deferred/Deferment. Term used in grazing management actions that denotes a less than one year period where no livestock grazing is allowed.

DESTINATION RECREATION-TOURISM MARKET. National or regional recreation-tourism visitors and other constituents who value public lands as recreation-tourism destinations. Major investments in facilities and visitor assistance are authorized within SRMAs where the BLM's strategy is to target demonstrated destination recreation-tourism market demand. Here, recreation management actions are geared toward meeting primary recreation-tourism market demand for specific activity, experience, and benefit opportunities. These opportunities are produced through maintaining prescribed natural resource setting character and by structuring and implementing management, marketing, monitoring, and administrative actions accordingly.

DISCRETIONARY ACTIONS. These include livestock grazing, mining, and lands and realty actions.

DISPOSAL. A transaction that leads to the transfer of title to public lands from the federal government.

DIVERSITY. The relative abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

ELIGIBLE RIVER SEGMENT. A section of a river that qualifies for inclusion in the National Wild and Scenic Rivers System through determination that it is free flowing and with its adjacent land area possessing at least one river-related value considered to be outstandingly remarkable.

ENDANGERED SPECIES. Any species that is in danger of extinction throughout all or a significant portion of its range.

Environmental Assessment. A concise public document prepared to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. It includes a brief discussion of the need for the proposal, the alternatives considered, the environmental impact of the proposed action and alternatives, and a list of agencies and individuals consulted.

Environmental Impact Statement (EIS). A formal public document prepared to analyze the impacts on the environment of a proposed project or action and released for comment and review. An EIS must meet NEPA requirements, CEQ guidelines, and the directives of the agency responsible for the proposed project or action.

Ephemeral Stream. Stream reaches where water flows for only brief periods during storm runoff.

Erosion. Detachment or movement of soil or rock fragments by water, wind, or gravity. Accelerated erosion is much more rapid than normal, natural, or geologic erosion, primarily as a result of the influence of surface-disturbing activities of people, animals, or natural catastrophes.

Exchange. A transaction whereby the federal government receives land or interests in land in exchange for other land or interests in land.

Exclosure. A fence or other device that completely surrounds a relatively small area, such as a wetland or research plot, to exclude large nonnative animals, such as cattle and burros.

Exclusion Area. An environmentally sensitive area where rights-of-way would be granted only in cases where there is a legal requirement to provide such access.

Extensive Recreation Management Area (ERMA). A public lands unit identified in land use plans containing all acreage not identified as a Special Recreation Management Area. Recreation management actions within an ERMA are limited to only those of a custodial nature.

Federal Land Policy and Management Act of 1976 (FLPMA). Public Law 94-579 signed by the President on October 21, 1976. Establishes public land policy for management of lands administered by the Bureau of Land Management. FLPMA specifies several key directions for the Bureau, notably (1) management on the basis of multiple-use and sustained yield, (2) land use plans prepared to guide management actions, (3) public lands managed for the protection, development, and enhancement of resources, (4) public lands retained in federal ownership, and (5) public participation utilized in reaching management decisions.

Fire Behavior. The manner in which a fire reacts to fuel, weather, and topography. Common terms used to describe behavior include smoldering, creeping, running, spotting, torching, and crowning.

Fire For Resource Benefit. The application of the response to naturally ignited wildland fires based on social, legal and ecological consequences of the fire to accomplish specific resource management objectives in predefined designated areas outlined in fire management plans. Operational management is described in the wildland fire implementation plan (WFIP)

Fire Intensity. Technically calculated as the energy release per unit length of flame front. Generally, fire intensity is a component of fire behavior and refers to the heat of the fire. Fire intensity is measured as the fire burns. A high intensity fire would be more difficult to suppress than a low intensity fire.

Fire Severity. The effect of fire. Severity is reflected in killed vegetation or soil damage. Fire severity is determined after the fire. A high intensity fire may not have severe fire effects. High severity fire could result in soil erosion, sediment in water, landslides, and weed infestation. Often, low severity fire is desirable for removing dead fuels.

Fire Suppression. Fire control activities concerned with controlling and extinguishing a fire, starting at the time the fire is discovered.

Fluid Minerals. Oil, gas, geothermal resources, carbon dioxide, and coalbed methane.

Forage. All browse and herbaceous growth available and acceptable to grazing animals or that may be harvested for feeding purposes. Forage includes pasture, rangelands, and crop aftermath. Feed includes forage, hay, and grains.

Grazing. Consumption of forage from rangelands or pastures by livestock, wild horses/burros or wildlife.

Grazing Allotment. An area of land where one or more operators graze their livestock. It generally consists of public lands but may include parcels of private or state-owned lands. The number of livestock and period of use are stipulated for each allotment.

Grazing Fee. A charge, usually monthly, for grazing a specific kind of livestock.

Grazing Permit/License/Lease. Official written permission to graze a specific number, kind, and class of livestock for a specified period on a defined rangeland.

Groundwater. Water beneath the land surface, in the zone of saturation.

Guzzler. General term covering such devices as guzzlers and wildlife drinkers. A natural or artificially constructed structure or device to capture and hold naturally flowing water to make it accessible to small and large animals. Most guzzlers involve above or below ground piping, storage tanks, and valves.

Habitat. A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Habitat Conservation Plan (HCP). a comprehensive planning document pursuant to Section 10(a)(2) of the Endangered Species Act that is a mandatory component of an incidental take permit for a project with no federal nexus. (See Multi-Species Conservation Plan.)

Habitat Management Plan (HMP). A written and approved activity plan for a geographical area that identifies habitat management activities to be implemented in achieving specific objectives of planning decisions.

Hardrock Minerals. Locatable minerals that are neither leasable (such as oil, gas, coal, oil shale, phosphate, sodium, potassium, sulphur, asphalt, or gilsonite) nor salable (such as common variety sand and gravel). Hardrock minerals include copper, lead, zinc, magnesium, nickel, tungsten, gold, silver, bentonite, barite, feldspar, fluorspar, and uranium.

Hazardous Material. A substance, pollutant, or contaminant that, due to its quantity, concentration, or physical or chemical characteristics, poses a potential hazard to human health and safety or to the environment if released into the workplace or the environment.

Herd Area (HA). Related to wild horses and burros, a HA is the geographic area identified as having been used by a wild horse or burro herd as its habitat in 1971.

Herd Management Area (HMA). Related to wild horses and burros, a HMA is an area or areas established within the HA for the maintenance of wild horses and burros.

High Walls. Uphill sides of contour mine excavations.

Impact. The effect, influence, alteration, or imprint caused by an action.

Indian Trust Assets. Legal interests in property, physical assets, or intangible property rights held in trust by the United States for Indian tribes or individual Indians.

Indicator. Components of a system whose characteristics (presence or absence, quantity, distribution) are used as an index of an attribute (e.g., rangeland health attribute) that are too difficult, inconvenient, or expensive to measure.

Interior Board of Land Appeals (IBLA). A board within the Department of the Interior's Office of Hearings and Appeals that acts for the Secretary of the Interior by responding to appeals of decisions on the use and disposition of public lands and resources. Because IBLA acts for and on behalf of the Secretary of the Interior, its decisions usually represent the Department's final decision but are subject to the Secretary's review and to appeal in federal court.

Interdisciplinary Team. A formation of varied land use and resource specialists providing a coordinated, integrated information base for overall land use planning and management.

Key (Forage) Species. (1) Species that, because of their importance, must be considered in a management program or (2) forage species whose use shows the degree of use of associated species.

KGRA (Known Geothermal Resource Area). An area that the BLM determined; based on geologic and technical evidence, that a person with geothermal knowledge would spend money to develop the geothermal resource, areas that were located near wells capable of commercial production of geothermal fluids, or areas where there was a competitive interest in geothermal resource development (not a singular criterion existed). The BLM geothermal leasing regulation of July 2007 replaced the term KGRA with "lease areas" to identify potential lease areas.

Land Tenure. Refers to ownership of a parcel of land. BLM-managed public lands are owned by the United States government for the citizens of the United States.

Leasable Minerals. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium and sodium

minerals, and oil and gas. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

LEK. Areas used by sage-grouse during the mating season where males display to attract receptive females. These sites are characterized by low vegetation with sparse shrubs, often surrounded by big sagebrush communities. Strutting grounds or leks are considered to be the center of sage-grouse activities.

LENTIC. Pertaining to standing water, such as lakes and ponds.

LITHIC SITE. An archaeological site containing debris left from the manufacture, use, or maintenance of flaked stone tools.

LOCATABLE MINERALS. Minerals or materials subject to claim and development under the Mining Law of 1872, as amended. Generally includes metallic minerals, such as gold and silver, and other materials not subject to lease or sale, such as some bentonites, limestone, talc, some xeolites. Whether or not a particular mineral deposit is locatable depends on such factors as quality, quantity, mineability, demand, and marketability.

LONG-TERM EFFECT. This could occur for several years after implementation of an alternative.

LOTIC. Pertaining to actively moving water.

MECHANICAL WEED TREATMENT. The use of tractors, crawler-type tractors, mowing tools, or specially designed vehicles with attached implements for mechanical vegetation treatments. Treatment types can include burial, tillage, and mowing.

MEMORANDUM OF UNDERSTANDING (MOU). Agreements with other district offices and agencies where resources (e.g. wild horses and burros) are managed across district office and agency administrative boundaries).

MINERAL ENTRY. Claiming public lands (administered by the BLM) under the Mining Law of 1872 for the purpose of exploiting minerals. May also refer to mineral exploration and development under the mineral leasing laws and the Material Sale Act of 1947.

MINERAL MATERIALS. Common varieties of such commodities as sand, building stone, gravel, clay, and moss rock obtainable under the Minerals Act of 1947, as amended.

MINING LAW OF 1872. Provides for claiming and gaining title to locatable minerals on public lands. Also referred to as the General Mining Laws or Mining Laws.

MINERAL WITHDRAWALS. Closure of land to mining laws, including sales, leasing and location, subject to valid existing rights.

MITIGATION. Alleviation or lessening of possible adverse effects on a resource by applying appropriate protective measures or adequate scientific study. Mitigation may be achieved by avoidance, minimization, rectification, reduction, and compensation.

MONITORING. The timed collection of information to determine the effects of resource management and to identify changing resource conditions or needs.

MULTIPLE-USE. Management of the various surface and subsurface resources so that they are jointly used in the manner that will best meet the present and future needs of the public, without permanent impairment of the productivity of the land or the quality of the environment.

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS). The allowable concentrations of air pollutants specified by the federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

NATIONAL CONSERVATION AREAS. Areas designated by Congress so that present and future generations of Americans can benefit from the conservation, protection, enhancement, use, and management of these areas by enjoying their natural, recreational, cultural, wildlife, aquatic, archaeological, paleontological, historical, educational, and scientific resources and values.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA). Public Law 91-190. Establishes environmental policy for the nation. Among other things, NEPA requires federal agencies to consider environmental values in decision making processes.

NATIONAL HISTORIC PRESERVATION ACT (NHPA). The primary federal law providing for the protection and preservation of cultural resources. The NHPA established the National Register of Historic Places, the Advisory Council on Historic Preservation, and the State Historic Preservation Office.

NATIONAL HISTORIC TRAILS. Trails established to identify and protect historic routes; they follow as closely as possible the original trails or routes of travel of national historic significance.

NATIONAL REGISTER OF HISTORIC PLACES. A listing of architectural, historical, archaeological, and cultural sites of local, state, or national significance, established by the Historic Preservation Act of, 1966, and maintained by the National Park Service.

NATIONAL SCENIC TRAILS. Trails established by an Act of Congress that are intended to provide for maximum outdoor recreation potential and for the conservation and enjoyment of nationally significant scenic, historical, natural, and cultural qualities of the areas through which these trails pass. National Scenic Trails may be located to represent desert, marsh, grassland, mountain, canyon, river, forest, and other areas, as well as land forms that exhibit significant characteristics of the physiographic regions of the nation.

NATIONAL WILD AND SCENIC RIVERS SYSTEM (NWSRS). Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or similar values designated by Congress under the Wild and Scenic Rivers Act of October 2, 1968, for the preservation of their free-flowing condition.

NO SURFACE OCCUPANCY (NSO). A mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the lease surface in order to protect special values or uses.

OFF-HIGHWAY VEHICLE (OFF-ROAD VEHICLE). Any motorized vehicle capable of, or designed for, travel on or over land, water, or other natural terrain, excluding: (1) any nonamphibious

registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the an officer or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when being used for national defense.

Off-Highway Vehicle Area Designations. BLM-administered lands in the WDO are designated as Open, Limited, or Closed for OHV use.

- **Open**—Designated areas where all types of motorized vehicles (such as, jeeps, all-terrain vehicles, motorized dirt bikes) are permitted at all times, anywhere in the area, on roads or cross country, subject to the operating regulations and vehicle standards set forth in 43 CFR subparts 8341 and 8342.
- **Limited**—Designated areas where motorized vehicles are restricted to designated routes. Off-road cross-country travel is prohibited in limited areas, unless an area is specifically identified as one where cross-country over-snow travel is allowed. Some existing routes may be closed in limited areas.
- **Closed**—Designated areas where off-road motorized vehicle travel is prohibited year-long. Emergency use of vehicles is allowed year-long.

Paleontological Resources. The physical remains or other physical evidence of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources are important for correlating and dating rock strata and for understanding past environments, environmental change, and the evolution of life.

Particulate Matter (PM). One of the six "criteria" pollutants for which the US EPA established National Ambient Air Quality Standards. Particulate matter is defined as either fine particulates, with an aerodynamic diameter of 10 micrometers (PM_{10}) or less, or fine particulates with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$).

Perennial Plant. A plant that has a life cycle of three or more years.

Perennial Stream. A stream that flows throughout the year for many years.

Permittee. One who holds a permit to graze livestock on state, federal, or certain privately owned lands.

Planning Area. The geographical area for which land use and resource management plans are developed and maintained. The WDO boundary defines the planning area assessed in this RMP.

Planning Issues. Concerns, conflicts, and problems with the existing management of public lands. Frequently, issues are based on how land uses affect resources. Some issues are concerned with how land uses can affect other land uses, or how the protection of resources affects land uses.

Prescribed Fire Treatments. Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met before the fire is started.

Priority 1 Habitat. See exclusion area definition above.

PRIORITY 2 HABITAT. See avoidance area definition above.

PRIORITY WATERSHED. A watershed that contains either threatened or endangered species habitat or the presence of municipal water supply collection areas.

PROPER FUNCTIONING CONDITION (PFC). Riparian-wetlands function properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows. The functioning condition of these areas is influenced by geomorphic features, soil, water, and vegetation.

PUBLIC LAND. Any land and interest in land (outside of Alaska) owned by the US and administered by the Secretary of the Interior through the BLM.

RANGELAND. A kind of land on which the native vegetation, climax, or natural potential consists predominantly of grasses, grass-like plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide plant cover that is managed like native vegetation. Rangelands may consist of natural grasslands, savannas, shrub lands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows.

RAPTOR. Bird of prey with sharp talons and strongly curved beaks, such as hawks, owls, vultures, and eagles.

RECREATION AND PUBLIC PURPOSES ACT (R&PP). Act of June 14, 1926 (44 Stat. 741), as amended, that provides for the purchase or lease of public lands by (a) federal, state, or local government for any activity that serves the interest of the general public consistent with public policy or (b) nonprofit organizations if the lands are to be used for recreation purposes in an established or proposed recreation project area.

RECREATION EXPERIENCES. Psychological outcomes realized either by recreation-tourism participants as a direct result of their on-site leisure engagements and recreation-tourism activity participation or by nonparticipating community residents as a result of their interaction with visitors and guests within their community or interaction with the BLM and other public and private recreation-tourism providers and their actions.

RECREATION NICHE. The place or position within the strategically targeted recreation-tourism market for each Special Recreation Management Area that is most capable of producing certain kinds of recreation opportunities and that is most responsive to identified visitor or resident customers, given available supply and current demand, for the production of specific recreation opportunities and the sustainable maintenance of accompanying natural resource and community setting character.

RECREATION OPPORTUNITIES. Favorable circumstances enabling visitors' engagement in a leisure activity to realize immediate psychological experiences and attain more lasting, value-added beneficial outcomes.

RECREATION SETTING CHARACTER CONDITIONS. The distinguishing recreational qualities of any landscape, objectively defined along a continuum, ranging from primitive to urban landscapes, expressed in terms of the nature of the component parts of its physical, social, and administrative attributes. These recreational qualities can be both classified and mapped. This classification and

mapping process should be based on variation that either exists (for example, setting descriptions) or is desired (for example, setting prescriptions) among component parts of the various physical, social, and administrative attributes of any landscape. The recreation opportunity spectrum is one of the tools for doing this.

Recreation Settings. The collective distinguishing attributes of landscapes that influence, and sometimes actually determine, what kinds of recreation opportunities are produced.

Recreation-Tourism Market. Recreation-tourism visitors, affected community residents, affecting local governments and private sector businesses, or other constituents and the communities or other places where these customers originate (local, regional, national, or international). Based on analysis of supply and demand, land use plans strategically identify primary recreation-tourism markets for each Special Recreation Management Area—destination, community, or undeveloped.

Resource Management Plan (RMP). A land use plan that establishes multiple-use guidelines and management objectives for a given planning area.

Restoration. The return or recovery of a habitat from a degraded state to its original community structure, natural complement of species, and natural functions.

Rest Period. Term used in grazing management actions that denotes a one year period where no livestock grazing is allowed.

Resource Advisory Council (RAC). A group established pursuant to 43 CFR 1780 and other authorities to advise the BLM on resource management issues. In the Winnemucca District Office, the Sierra Front/NW Great Basin Resource Advisory Group serves as the RAC.

Right-of-Way. Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, pursuant to a right-of-way authorization.

Riparian. Situated on or pertaining to the bank of a river, stream, or other body of water. Normally describes plants of all types that grow rooted in the water table or sub-irrigation zone of streams, ponds, and springs.

Road. A linear route managed for use by low-clearance vehicles having two or more wheels and that has been improved and maintained by mechanical means to ensure relatively regular and continuous use. (A way maintained strictly by the passage of vehicles does not constitute a road.)

Roadless. Refers to the absence of roads that have been constructed and maintained by mechanical means to ensure regular and continuous use.

Road Maintenance. Includes blading, brush removal, scarification, gravelling, water barring, spur ditching, establishing low water crossings, seeding, and installing cattle guards and culverts.

Runoff. A general term used to describe the portion of precipitation on the land that ultimately reaches streams; may include channel and nonchannel flow.

Salable Minerals. Minerals that may be sold under the Material Sale Act of 1947, as amended. Included are common varieties of sand, stone, gravel, and clay.

Scoping Process. An early and open public participation process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

Season of Use. The time during which livestock grazing is permitted on a given range area, as specified in the grazing permit.

Seeding. A vegetation treatment that includes the application of grass, forb, or shrub seed, either by air or from the ground. In areas of gentle terrain, ground applications of seed are often accomplished with a rangeland drill. Seeding allows native species or placeholder species to become established and for disturbed areas to be restored to a perennial-dominated cover type, thereby decreasing the risk of subsequent invasion by exotic plant species. Seeding would be used primarily as a follow-up treatment in areas where disturbance or the previously described treatments have removed exotic plant species and their residue.

Seeps. Groundwater discharge areas. In general, seeps have less water flow than a spring.

Short-Term Effect. The effect occurs only during or immediately after implementation of the alternative.

SNPLMA (Southern Nevada Public Land Management Act). Approved October 1998 (Public Law 105-263). Provides for the disposal of public land within a specific area in the Las Vegas Valley and creates a special account into which 85 percent of the revenue generated by land sales or exchanges in the Las Vegas Valley is deposited. The remaining 15 percent goes to state and local governments. Revenue in the special account can be used for the acquisition of environmentally sensitive lands in Nevada, capital improvements, development of a multispecies habitat conservation plan in Clark County, and development of parks, trails, and natural areas in Clark County.

Soils. (1) The unconsolidated mineral material on the immediate surface of the earth that serves as the natural medium for the growth of land plants. (2) The unconsolidated mineral matter of the surface of the earth that has been influenced by genetic and environmental factors, including parent material, climate, topography, all acting over a period of time and producing soil that differs from the parent material in physical, chemical, biological and morphological properties and characteristics.

Soil Compaction. A decrease in the volume of soil as a result of compression stress.

Soil Series. A group of soils having genetic horizons (layers) that, except for texture the surface layer, have similar characteristics and arrangement in the profile.

Special land Use Permit. A permit that authorizes the use of public land for a purpose not specifically authorized under other regulation or statute.

Special Recreation Management Area (SRMA). A public lands unit identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific, structured recreation opportunities (that is, activity, experience, and benefit opportunities). Both land use plan decisions and subsequent implementing actions for recreation in each SRMA are geared to a strategically identified primary market—destination, community, or undeveloped.

Special Recreation Permit. A permit that authorizes the recreational use of an area and is issued pursuant to the regulations contained in 43 Code of Federal Regulations (CFR) Subpart 8372,

and 36 CFR Part 71. Under the Land and Water Conservation Fund Act, implemented by these regulations, special recreation permits are required for all commercial use, for most competitive events, and for the individual noncommercial use of special areas where permits are required.

Special Status Species. BLM sensitive species are designated by the State Director under 16 US Code 1536(a)(2). Sensitive species are managed so they will not need to be listed as proposed, threatened, or endangered. They are given the same level of protection as candidate species (BLM Manual 6840).

Split Estate. Lands on which the mineral estate remains with the federal government (BLM).

Standard Operating Procedure (SOP). A written procedure or set of written procedures providing direction for consistently and correctly performing routine operations. These written procedures set forth methods expected to be followed during the performance of the particular task. The SOPs for the Bureau of Land Management, Winnemucca District Office, are approved by the land use manager and are adopted as policy for the Winnemucca District Office.

Standards for Rangeland Health. Standards of land health are expressions of levels of physical and biological condition or degree of function required for healthy lands and sustainable uses, and define minimum resource conditions that must be achieved and maintained.

Suitable River. A river segment found, through administrative study by an appropriate agency, to meet the criteria for designation as a component of the National Wild and Scenic Rivers System, specified in Section 4(a) of the Wild and Scenic Rivers Act.

Sustainable Development. Post-operational land uses that intend to benefit local communities and economies, while ensuring the well-being of the environment.

Sustained Yield. The continuation of a healthy desired plant community.

Total Dissolved Solids. Salt or an aggregate of carbonates, bicarbonates, chlorides, sulfates, phosphates, and nitrates of calcium, magnesium, manganese, sodium, potassium, and other cations that form salts.

Total Maximum Daily Load (TMDL). A calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

Traditional Cultural Properties. A cultural property that is eligible for inclusion in the National Register of Historic Places because of its association with a living community's cultural practices or beliefs that (a) are rooted in that community's history and that (b) are important in maintaining the community's continuing cultural identity.

Trail. A linear route managed for human-power (such as hiking or bicycling), stock (such as horses), or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Trespass. Any unauthorized use of public land.

Understory. That portion of a plant community growing underneath the taller plants on a site.

UPLAND. Land at a higher elevation than the alluvial plain or low stream terrace; all lands outside the riparian-wetland and aquatic zones.

UTILITY CORRIDOR. Tract of land varying in width forming a passageway through which various commodities, such as oil, gas, and electricity, are transported.

VEGETATION RELEASE CRITERIA. Objectives used at a revegetation site to determine whether 1) the desirable species have been successfully established and provide sufficient cover to adequately protect the site from soil erosion, 2) there is evidence that a self-sustaining community has established, and 3) vegetative reproduction and establishment of the desirable seeded species has occurred. Revegetation monitoring activities are oriented toward addressing whether these criteria have been met.

VEGETATION TYPE. A plant community with immediately distinguishable characteristics based on and named after the apparent dominant plant species.

VEGETATIVE COMMUNITY TYPE. Refers to the species or various combinations of species that dominate or appear to dominate an area of rangeland or habitat.

VERTEBRATE. An animal having a backbone or spinal column.

VIEWSHED. The panorama from a given viewpoint that encompasses the visual landscape, including everything visible within a 360-degree radius.

VISUAL RESOURCES. The visible physical features on a landscape, (topography, water, vegetation, animals, structures, and other features) that make up the scenery of the area.

VISUAL RESOURCE MANAGEMENT (VRM). The inventory and planning actions taken to identify visual resource values and to establish objectives for managing those values and the management actions taken to achieve the visual resource management objectives.

VISUAL RESOURCE MANAGEMENT CLASSES. VRM classes identify the degree of acceptable visual change within a characteristic landscape. A classification is assigned to public lands based on the guidelines established for scenic quality, visual sensitivity, and visibility.

- **VRM Class I**—Preserves the existing characteristic landscape and allows for natural ecological changes only. Includes congressionally authorized areas (wilderness), WSAs and areas approved through the RMP where landscape modification activities should be restricted.

- **VRM Class II**—Retains the existing characteristic landscape. The level of change in any of the basic landscape elements due to management activities should be low and not evident.

- **VRM Class III**—Partially retains the existing characteristic landscape. The level of change in any of the basic landscape elements due to management activities may be moderate and - evident.

- **VRM Class IV**—Provides for major modifications of the characteristic landscape. The level of change in the basic landscape elements due to management activities can be high. Such activities may dominate the landscape and be the major focus of viewer attention.

WATERSHED. Topographical region or area delineated by water draining to a particular watercourse or body of water.

WETLANDS. Permanently wet or intermittently water-covered areas, such as swamps, marshes, bogs, potholes, swales, and glades.

WILDERNESS. An area formally designated by Congress as a part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. Identified by Congress in the Wilderness Act of 1964, namely, size, naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values, such as geological, archaeological, historical, ecological, scenic, or other features.

WILDERNESS STUDY AREA (WSA). A roadless area that has been inventoried (but not designated by Congress) and found to have wilderness characteristics as described in Section 603 of the Federal Land Policy and Management Act of 1976 and Section 2(c) of the Wilderness Act of 1964.

WILDFIRE. An unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped allowed-fire-for-resource-benefit events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

WILDLAND FIRE. Any nonstructure fire that occurs in the wildland. The three distinct types of wildland fire are wildfire, allow fire for resource benefit, and prescribed fire.

WILDLAND-URBAN INTERFACE (WUI). The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

WINTER RANGE. A Nevada Department of Wildlife definition that applies to elk and mule deer habitat. That part of the overall range where 90 percent of the individuals are located during the average five winters out of ten from the first heavy snowfall to spring green up or during a site-specific period of winter.

WITHDRAWAL. An action that restricts the use of public land and segregates the land from the operation of some or all of the public land and mineral laws. Withdrawals are also used to transfer jurisdiction of management of public lands to other federal agencies.

YEAR-LONG GRAZING. Continuous grazing for a calendar year.

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